



Avaya SMON Manager User Guide

May 2004



Avaya SMON Manager User Guide

Copyright Avaya Inc. 2004 ALL RIGHTS RESERVED

The products, specifications, and other technical information regarding the products contained in this document are subject to change without notice. All information in this document is believed to be accurate and reliable, but is presented without warranty of any kind, express or implied, and users must take full responsibility for their application of any products specified in this document. Avaya disclaims responsibility for errors which may appear in this document, and it reserves the right, in its sole discretion and without notice, to make substitutions and modifications in the products and practices described in this document.

Avaya™ and SMON™ are registered trademarks and trademarks of Avaya Inc.

© 2004 Avaya Inc. All rights reserved. All trademarks identified by the ® or TM are registered trademarks or trademarks, respectively, of Avaya Inc. All other trademarks are the property of their respective owners.

Release 4.002

Table of Contents

Prefacevi

The Purpose of This Guide	vi
Who Should Use This Guide	vi
Organization of This Guide	vi

Chapter 1 — Overview 1

What is RMON	1
What is SMON	2
Switch Monitoring	3
Enterprise Monitoring	3
SMON Management Applications	3
Overview of SMON Concepts	4
SMON Devices	5
Top-Down Monitoring	6
Top-Down Monitoring for the MAC Layer	6
Top-Down Monitoring for the Upper Layers	7
SMON Tools	9
Avaya SMON Manager Tools	10
Enterprise Switch Statistics	10
Enterprise Port Statistics	11
Enterprise Voice Port Statistics	11
Enterprise History	11
Enterprise Switch History	12
Port History	13
Device SMON Tools	14

Chapter 2 — Introduction to Avaya SMON Manager..... 15

Starting Avaya SMON Manager	15
The Online SMON User Interface	15
SMON Tabs	16
Online SMON Toolbar	16
Dialog Area	17
Desktop	17
Working with SMON Tools	18
Configuring Display Options	19
Polling Interval	19
Display Mode	20
Items Per Screen	20
TopN Number of Elements	20

Configuring Report Options	21
Using Dialog Box Options	21
Generating Reports	22
Report Now	23
Auto Report	24
Managing Windows	25
Chapter 3 — Switch Statistics	26
Accessing Switch Statistics	26
Using Switch Statistics	27
Understanding the Switch Statistics Window	27
Selecting Switches to Poll	29
Filtering the Switch Statistics Display	31
Switch Statistics Counters	31
Sorting the Display	32
Searching for Switches	33
Chapter 4 — Port Statistics	34
Accessing Port Statistics	34
Using Port Statistics	35
Understanding the Port Statistics Window	35
Selecting Ports and LAGs to Poll	37
Filtering the Port Statistics Display	39
VLAN Filtering	40
TopN Filtering	41
Port Statistics Counters	42
Sorting the Display	43
Searching for Ports and LAGs	44
Chapter 5 — Voice Port Statistics	46
Accessing Voice Port Statistics	46
Using Voice Port Statistics	47
Understanding the Voice Port Statistics Window	47
Selecting IP Telephones to Poll	49
Filtering the Voice Port Statistics Display	51
Voice Port Statistics Counters	52
Sorting the Display	53
Searching for IP Telephones	54
Chapter 6 — Introduction to SMON History	55
Accessing SMON History	55
The SMON History User Interface	55
SMON Tabs	56
SMON History Toolbar	56
Desktop	57
Info Box	57
Managing Windows	58

History Text Report	58
Chapter 7 — Using SMON History	59
Using Enterprise History	60
Understanding the Enterprise History Window	60
Collection Parameters	63
Activating/Deactivating History Collections	63
Activating Auto Save	64
Viewing the Collection Log	65
Refreshing the Device List	66
Saving the Enterprise History Window	67
Using Switch History	68
Opening a Switch History Window	68
Understanding the Switch History Window	69
Saving a Switch History Report	71
Using Port History	72
Opening the Port History Chart	72
Understanding the Port History Chart	73
Modifying the Port History Display	74
Appendix A — Avaya SMON Manager Menus	75
Online SMON Menus	75
File Menu	75
Edit Menu	75
View Menu	76
Window Menu	76
Help Menu	77
SMON History Menus	77
File Menu	77
Edit Menu	77
View Menu	78
Actions Menu	78
Window Menu	78
Help Menu	79
Appendix B — Setting Up the SMON License	80
Index	81

Preface

Welcome to Avaya SMON Manager. This chapter provides an introduction to the structure and assumptions of the guide. It includes the following sections:

- [The Purpose of This Guide](#) - A description of the intended purpose of this guide.
- [Who Should Use This Guide](#) - A description of the intended audience of this guide.
- **Organization of This Guide** - A brief description of the subjects covered in each chapter of this guide.

The Purpose of This Guide

This guide contains the information needed to operate Avaya SMON Manager efficiently and effectively.

Who Should Use This Guide

This guide is intended for use by network managers familiar with network management and its fundamental concepts. It is assumed that the user has the basic responsibility for monitoring Avaya's intelligent switching devices and the network traffic.

Organization of This Guide

This guide is structured to reflect the following conceptual divisions:

- **Introduction** - An introduction to Avaya SMON Manager including the following chapters:
 - **Preface** - This chapter describes the guide's purpose, intended audience, and organization.

- **Overview** - This chapter provides an overview of the RMON standard and Avaya Inc.'s SMON concepts, a graphical example of SMON's position in a network, a description of the Avaya Inc. switch architecture and monitoring concepts, and an introduction to the SMON tools.
- **Online SMON** - Instructions on how to use Online SMON Manager applications.
 - **Introduction to Avaya SMON Manager** - This chapter describes how to launch Avaya SMON Manager and the SMON tools. It also describes the Online SMON user interface.
 - **Enterprise Switch Statistics** - This chapter describes the Enterprise Switch Statistics tool in detail, including sample screens and filtering options.
 - **Enterprise Port Statistics** - This chapter describes the Enterprise Port Statistics tool in detail, including sample screens and filtering options.
 - **Enterprise Voice Port Statistics** - This chapter describes the Enterprise Voice Port Statistics tool in detail, including sample screens and filtering options.
- **SMON History** - Instructions on how to use SMON History.
 - **Introduction to SMON History** - This chapter explains how to open SMON History and provides a detailed description of the SMON History user interface.
 - **Using SMON History** - This chapter describes the SMON History tools in detail.

The following Appendices are included at the end of this guide:

- **Appendix A** - The full menu structure in Avaya SMON Manager.
- **Appendix B** - How to set up the Avaya SMON Manager license.

1 Overview

This chapter describes Avaya SMON Manager, Avaya Inc.'s switched network monitoring system, and includes the following sections:

- [What is RMON](#) - A brief description of the RMON standard.
- [What is SMON](#) - A general description of SMON switch monitoring technology.
- [Overview of SMON Concepts](#) - An introduction to SMON concepts.
- [SMON Tools](#) - An introduction to different types of SMON tools.

What is RMON

RMON is the internationally recognized and approved standard for detailed analysis of shared Ethernet and Token Ring media. It ensures consistency in the monitoring and display of statistics between different vendors.

RMON's advanced remote networking capabilities provide the tools needed to monitor and analyze the behavior of segments on a network. In conjunction with an RMON agent, RMON gathers details and logical information about network status, performance, and users running applications on the network.

An RMON agent is a probe that collects information about segments, hosts, and traffic, and sends it to a management station.

The network administrator uses software tools to view the information collected by the RMON agent on the management station.

RMON has two levels:

- RMON I analyzes the MAC layer (Layer 2 in the OSI seven-layer model).
- RMON II analyzes the upper layers (Layers 3 and above).

RMON is an industry standard that Avaya Inc. and other companies have adopted in their network management applications. Avaya has taken the RMON standard and extended it to the switching environment.

What is SMON

SMON is an extension of the RMON standard. SMON adds to the monitoring capabilities of RMON in the following ways:

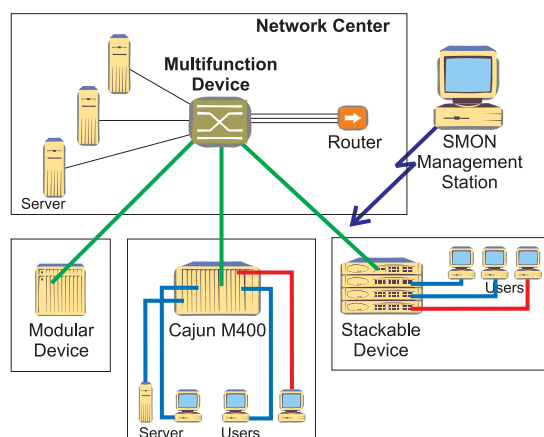
- It provides additional tools and features for monitoring in the switch environment.
- It provides a global view of traffic flow in a network with multiple switches.

SMON extends both RMON I for the MAC layer, and RMON II for the network layer and above. SMON monitoring collects and displays data in real-time.

Using SMON monitoring, you can get:

- A global view of traffic for all switches on the network.
- An overall view of traffic passing through a specific switch.
- Detailed data about the hosts transmitting packets or cells through a switch.
- An analysis of traffic passing through each port connected to a switch.
- A view of traffic between various hosts connected to a switch.

Figure 1-1. SMON Monitoring



Switch Monitoring

Effective switch management requires a comprehensive monitoring mechanism. RMON monitoring is not sufficient for switches. RMON probes can only be used to monitor and analyze a single segment. When you deploy a switch in the network, there are additional components in the network that can not be monitored using RMON, such as switch ports, VLAN, and statistics for all ports.

SMON meets this challenge by extending RMON to the switched network. The SMON extensions of RMON allow the network administrator to analyze the switched network and all of its components.

Enterprise Monitoring

Switches are often used in networks with a complex topology. Switches are typically deployed at the center of an enterprise network between clients and servers, or in backbones to provide high bandwidth and secure connectivity.

Avaya SMON Manager uses a client/server architecture for enterprise monitoring.

SMON extends RMON to provide global monitoring for complex networks. Avaya SMON Manager tools provide a network-wide view of all switched devices in the network. They enable you to monitor the entire network in a single window.

SMON Management Applications

The management applications provided by the SMON extension of RMON include SMON I tools on the MAC layer, and AnyLayer SMON tools on the network layer and above.

The SMON I tools extend RMON I to provide switch monitoring and global network monitoring on the MAC layer. These tools include:

- Enterprise Switch Statistics
- Enterprise Port Statistics
- Enterprise History
- Switch Statistics
- Switch-wide Quality of Service (QoS) indication (provided as part of Switch Statistics)

- VLAN Statistics
- Port Statistics
- Extended Port Statistics
- Ethernet Segment Statistics
- Host Statistics
- Host Matrix Statistics
- Port History

The AnyLayer SMON tools extend RMON II to provide switch monitoring on the network layer and above. These tools include:

- Protocol Directory
- Protocol Distribution
- Network Layer Host Statistics over IP
- Network Layer Subnet Statistics over IP

Overview of SMON Concepts

The SMON applications include Avaya SMON Manager and Avaya Device SMON applications for Avaya Campus devices. These applications comprise an RMON-compliant network management suite that implements the SMON extensions to RMON. Avaya SMON Manager and Avaya Device SMON applications work with the other components of Avaya Network Management to provide a full spectrum of in-depth monitoring of switch traffic and network performance.

Avaya SMON Manager and Avaya Device SMON applications consist of a software console application on a workstation and remote monitoring probes in network devices that support SMON.

The console applications communicate constantly with the SMON devices on your network. The console uses the SNMP protocol to gather information from the devices. Avaya SMON Manager and Avaya Device SMON applications provide you with a suite of powerful graphic display tools to view this information.

Avaya's SMON tools give you detailed analysis of the traffic flow on your switched network, from a global view down to a specific host, and from total MAC layer traffic down to a specific application protocol - all in real-time.

SMON Devices

Avaya's SMON tools provide monitoring capabilities for network devices that support the SMON extensions of the RMON standard.

For Avaya M770, Avaya P130, Avaya C360, Avaya W310, and Avaya P330 Devices, SMON monitoring capabilities can be activated by purchasing an SMON license from Avaya Inc.

Avaya M770 M-MLS Devices and Avaya P333R Devices also support the AnyLayer SMON extensions of RMON II.

The following table shows the SMON monitoring components supported by the various network devices.

Table 1-1. SMON Monitoring Support by SMON Devices

	Avaya P330 Devices	Avaya M770 Device DomainX	Avaya P460, P580, P882, W310, C360 and P130 Devices
Enterprise Switch Statistics	√	√	√
Enterprise Port Statistics	√	√	√
Enterprise Voice Port Statistics	√		
Enterprise Port History		√	√
Switch Statistics	√	√	√
Switch-wide QoS Indication		√ ¹	
VLAN Statistics	√	√	√
Port Statistics	√ ²	√	√ ²
Ethernet Segment Statistics		√	√
Host Statistics	√ ⁴		
Host Matrix Statistics	√ ⁴		
Port History	√	√	√
Protocol Directory	√ ⁴	√ ³	
Protocol Distribution	√ ⁴	√ ³	
Network Layer Host Statistics (IP)		√ ³	
Network Layer Subnet Statistics (IP)	√ ⁴	√ ³	

¹As part of Switch Statistics application.

²Extended Port Statistics are also supported.

³Supported when using the Avaya M770 M-MLS.

⁴Supported when using a Avaya P333R module.

Top-Down Monitoring

Avaya's SMON applications provide multi-tiered monitoring capabilities, both for the MAC layer (SMON I) and for upper layers (AnyLayer SMON). Multi-tiered monitoring enables you to use powerful top-down network monitoring techniques.

Top-down monitoring begins when you notice particular traffic flow patterns in a global view of your network. You then progressively focus in until you find the specific source or sources of the traffic. Using this method, the amount of information you need to assess is kept to a minimum. Top-down monitoring is robust enough to keep you in control of even the most complex and sophisticated networks.

Top-Down Monitoring for the MAC Layer

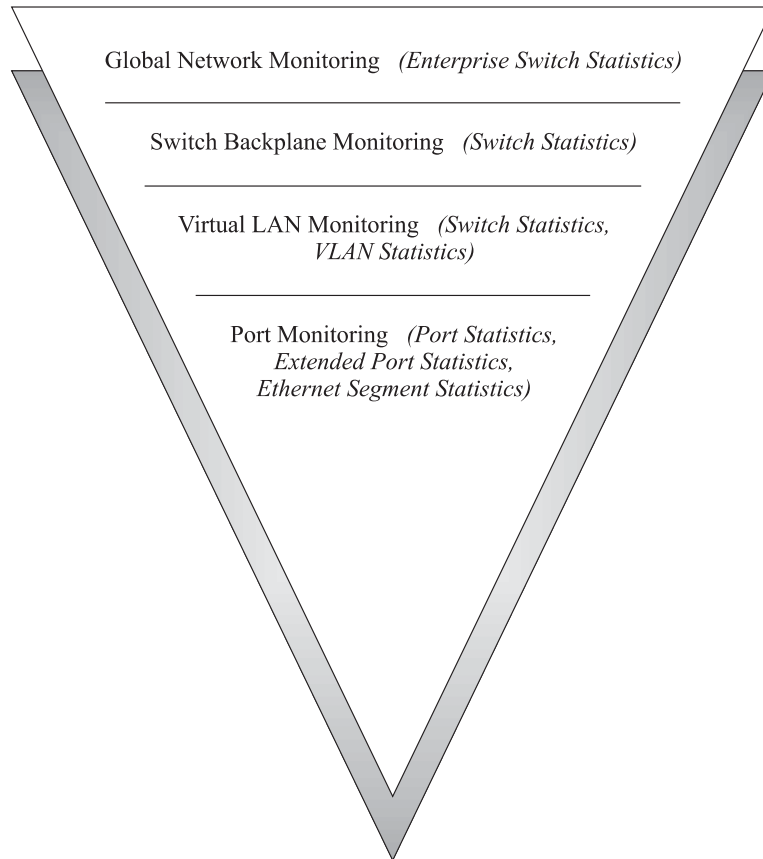
The top tier for Avaya SMON monitoring at the MAC layer (SMON I) is Enterprise Switch Statistics. The Enterprise Switch Statistics tool shows summary traffic statistics for all switches in your network.

The next two tiers provide a general look at the traffic passing through a specific switch. In this way, you can view at a glance whether the switch is functioning efficiently and effectively. These tiers provide answers to questions such as:

- Is there more traffic than usual passing through this switch?
- Are there more error packets than usual?
- How much traffic is passing through the VLANs?
- Do the VLANs have equal loads?

The lower monitoring tiers provide more focused views of the traffic on the device. They allow you to zero in on a specific host or port on a switch. You can then pinpoint the exact source of the traffic discovered in the upper tiers.

Figure 1-2. Top-Down Monitoring for the MAC Layer



Top-Down Monitoring for the Upper Layers

Avaya's SMON applications provide a series of AnyLayer SMON tools for implementing top-down monitoring techniques at the network layer and above. Top-down monitoring on upper layers allows you to view aspects of your network that extend beyond the router, or that apply to a specific application protocol.

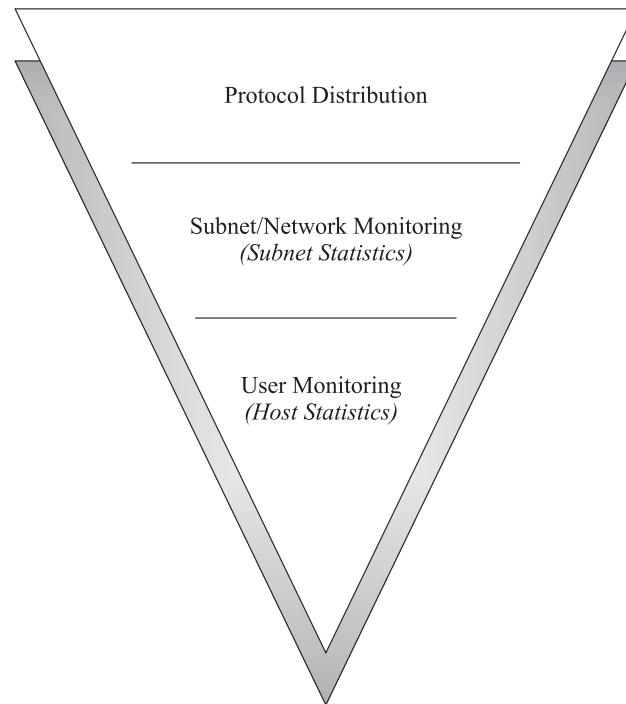
The upper tier of SMON top-down monitoring for upper layers is Protocol Distribution. The Protocol Distribution tool gives a general view of traffic through a switch, organized by protocol. Some of the types of questions Protocol Distribution may provide answers to are:

- What proportion of the traffic consists of IP maintenance protocols, such as ARP, RIP, or SAP?

- Is there an unusual amount of traffic for a specific type of application protocol, such as e-mail, name service, or HTTP?
- Is there an unusual amount of ICMP traffic that may be caused by flood pinging?

The lower tiers then allow you to locate the IP subnet or specific IP host that is the source of the traffic discovered using Protocol Distribution.

Figure 1-3. Top-Down Monitoring for Upper Layers

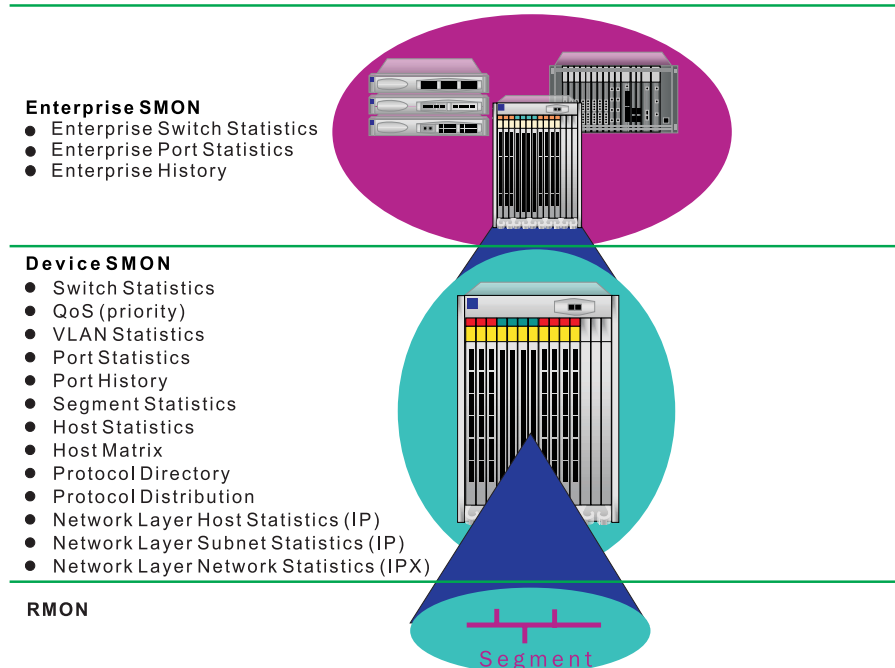


SMON Tools

The SMON tools are divided into the following:

- [Avaya SMON Manager Tools](#) - These tools provide global monitoring capabilities for multiple SMON devices on a network.
- [Device SMON Tools](#) - These tools monitor specific devices.

Figure 1-4. SMON Tools



Avaya SMON Manager Tools

Avaya SMON Manager tools provide global monitoring capabilities for multiple SMON devices on a network. There are two types of SMON Manager tools:

- **Online SMON Tools** - Tools providing network-wide switch and port monitoring information in real-time. These tools include:
 - [Enterprise Switch Statistics](#)
 - [Enterprise Port Statistics](#)
 - [Enterprise Voice Port Statistics](#)
- **SMON History Tools** - Tools providing views and reports of monitoring information gathered over time. These tools include:
 - [Enterprise History](#)
 - [Enterprise Switch History](#)
 - [Port History](#)
 - [Enterprise Voice Port Statistics](#)

In addition, the Port History tool can be accessed from Enterprise History. These tools enable the network administrator to monitor and control history activities of all switches from two central control screens.

Enterprise Switch Statistics

The Enterprise Switch Statistics tool enables the network administrator to monitor network statistics of all switches on the network level, in a network which supports SMON.

As more and more switches are implemented in networks, it becomes increasingly important to be able to get a quick view of all the switches. The Enterprise Switch Statistics application gives you a bird's-eye view of the switched network, allowing you to see at a glance which switches are functioning properly and which require attention.

All devices on the network which have been discovered by the management umbrella and possess an SMON probe are displayed in a bar.

Enterprise Switch Statistics displays a concise analysis of the traffic traversing the switch. Data is displayed as a bar graph, for an understanding of the exact levels of traffic traversing the switches.

The basic counters (displayed in the bar charts) provide a view of the key counters for each switch. Placing the cursor over each bar displays an Info Box, containing the Type, IP address, and MAC address of the associated device. This allows you to easily track switches.

The Enterprise Switch Statistics view forms the top layer of the MAC level top-down monitoring concept. It allows you to view the level of a specific user to isolate network problems quickly and accurately.

The relevant Device SMON application for each specific device can be opened from within Enterprise Switch Statistics.

Enterprise Port Statistics

Enterprise Port Statistics is an integral part of Avaya SMON Manager. It allows you to see the data passing through selected ports on switches.

For each port, Avaya SMON Manager summarizes the traffic, such as good and error unicasts into the switch, and packets from the switch.

If you notice that a particular port displays a disproportionate number of errors, this may indicate that a specific device connected to the port is responsible. If the attached port supports a Gigabit Ethernet connection, only a few hosts will be attached to this port. This makes it easy to locate the responsible host.

Enterprise Voice Port Statistics

Enterprise Voice Port Statistics allows you to see the information on the data passing through Avaya IP telephones.

For each Avaya IP telephone, Avaya SMON Manager summarizes the traffic, such as good and error unicasts into the switch, and packets from the IP telephone.

If you notice that a particular IP telephone displays a disproportionate number of errors, this may indicate that the specific IP telephone connected to the port may be faulty. In addition, very high traffic statistics for an IP telephone may indicate heavy usage.

Enterprise History

Using the Enterprise History tool, you can easily activate the history mechanism, and upload data from the Avaya M770, Avaya P130, Avaya P330, Avaya C360, Avaya G350, Avaya W310, Avaya C460, Avaya P580, and Avaya P882 Device probes.

In addition, you can perform an automatic, periodic upload of data stored in the probes during the collection period and store this data for later analysis.

For the Enterprise History application, the agent stores up to 360 separate data samples at equal time intervals that can later be retrieved from the SMON console. This is called History data, and provides an alternative method for analyzing the data in a switched network. The agent collects port history counters for all the ports in a device.

The Enterprise History application is a control center for managing the collection of History data on all agents in the network. Its main tasks are:

- Showing the status of Port History on each agent.
- Enabling the uploading of History data stored on each of the agents.
- Activating Port History on the console to display the History data stored on an agent.

The main advantages of using History data are:

- Quality information about network performance are received. After analyzing the performance, you can plan accordingly for expected times when ports on the network are reaching their full capacity.
- Data is collected on all switch ports at the same time.
- Statistics can be imported into an external application, such as a database or spreadsheet, for more detailed analysis.
- Data can be graphically displayed to view history behavior.

The Enterprise History application can save History data from the agents in the network manually or automatically. Manual upload means that you must select an agent and then activate the upload. Automatic upload means that the Enterprise History application saves the data according to a predefined interval for selected agents.

Enterprise Switch History

Enterprise Switch History provides the option to use two collections at the same time, a long term collection and a short term collection. The short term collection consists of data collected at brief intervals. This provides a complete breakdown of network performance over a few hours or days. The long term collection consists of data collected at longer intervals over a period of a few days or weeks. This method provides a long term view of the network.

A collection period is divided into a maximum number of separate samples. You can upload the data at any time during the collection period, even before it is completed. By analyzing this data using Port History, you can view the times and locations of the peak activity periods on the network.

The key parameters for collections are:

- **Collection Duration** - The interval for each collection. This defines how long the agent collects and stores the History data. For example, a collection duration of 2 weeks, results in the agent collecting and storing data for 2 weeks. The longer the collection, the longer the interval between when the agent collects data.
- **Status** - This defines whether a collection is active (the agent collects data) or inactive (the agent does not collect data). When setting an automatic upload of data for a Collection, the management station only uploads data for active Collections.

Port History

Using the Port History tool, you can access detailed history information collected by an SMON probe. This application is launched from the Enterprise Switch History application.

The benefits of Port History include:

- Quality information reports about the performance of specific ports.
- The ability to work on all switch ports at the same time.
- The ability to plan for expected times when ports on the network are reaching their full capacity after analyzing the performance.
- The ability to view the effect of a change of configuration on the performance of the network. You can also view the exact details of the change itself in terms of which modules were inserted or removed.
- The ability to discover the time a reported problem occurred and on which port.
- The ability to view the ports and times where the traffic is at its highest or lowest.
- The ability to import the statistics into an external application, such as a database or spreadsheet, for more detailed analysis.
- The ability to view individual port history statistics in graph form.

Device SMON Tools

Device SMON tools monitor specific devices and provide statistics on the traffic passing through a device's switch fabric, a VLAN, port, and host. In addition, Device SMON can provide information about host pairs talking to each other.

For information on Device SMON tools, refer to the appropriate *Avaya Device SMON User Guide*.

2 Introduction to Avaya SMON Manager

This chapter provides an introduction to Avaya SMON Manager, and contains the following sections:

- [Starting Avaya SMON Manager](#) - Instructions on starting Avaya SMON Manager.
- [The Online SMON User Interface](#) - A detailed description of the Online SMON user interface.
- [Working with SMON Tools](#) - Techniques for using Online SMON more effectively.

Starting Avaya SMON Manager

To start Avaya SMON Manager from Avaya Network Management Console, select **Tools > Avaya SMON Manager**. Avaya SMON Manager opens with the Online SMON window.

To start Avaya SMON Manager from HP-OV NNM (UNIX or NT-OV), select **Tools > Avaya > Avaya SMON Manager**. Avaya SMON Manager opens with the Online SMON window.

The Online SMON User Interface

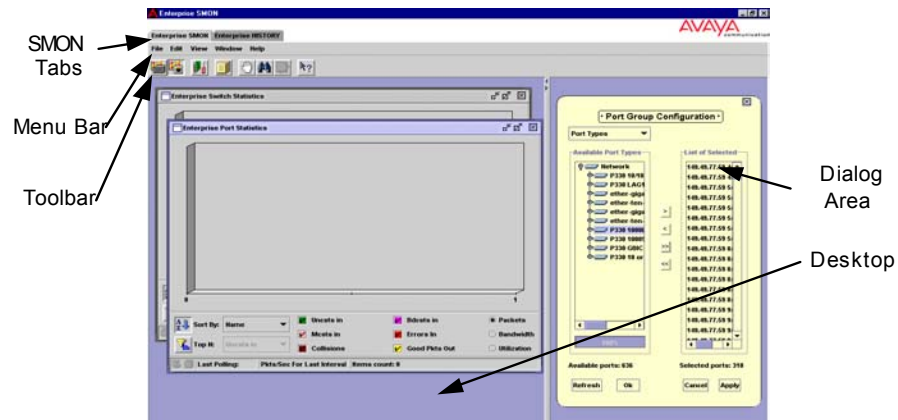
The user interface consists of the following elements:

- [SMON Tabs](#) - Tabs providing a method for switching between Online SMON and SMON History.
- **Menu Bar** - Menus for accessing Online SMON functions. For information on the full menu structure in Online SMON, refer to [“Online SMON Menus” on page 75](#).
- [Online SMON Toolbar](#) - Buttons providing shortcuts to important functions in Online SMON.
- [Desktop](#) - A resizable window where Online SMON windows are displayed.

- **Dialog Area** - A resizable window where all dialog boxes appear.

The figure below shows the user interface, with its various parts labeled.

Figure 2-1. Online SMON User Interface



SMON Tabs

The SMON tabs provide a method for switching between the Online SMON window and the SMON History window. To view a window, click the appropriate SMON tab. The relevant window appears.

Online SMON Toolbar

The Toolbar provides shortcuts to the main Online SMON functions and tools. The following table describes the buttons on the toolbar and lists the equivalent menu options.

Table 2-1. Online SMON Toolbar Buttons










Button	Description	Menu
	Activates the Switch Statistics tool.	File > New > Switch Statistics
	Activates the Port Statistics tool.	File > New > Port Statistics
	Activates the Voice Port Statistics tool.	File > New > Voice Port Statistics
	Opens the Configuration dialog box.	Edit > Configuration

Table 2-1. Online SMON Toolbar Buttons (Continued)

Button	Description	Menu
	Produces a report file for importing to a spreadsheet or word processor.	File > Report Now
	Temporarily stops and then restarts collection of SMON data. When the collection of SMON data is paused, the background of the chart appears white.	View > Pause
	Searches for a specific item.	Edit > Find
	Opens the Customize View dialog box.	View > Customize
	Opens context sensitive on-line help.	Help > Help On

If a tool is not active, clicking the corresponding Online SMON toolbar button launches the tool. If a tool is already active, clicking the corresponding Online SMON toolbar button brings the tool to the foreground. For more information about the individual tools, refer to [“Avaya SMON Manager Tools” on page 10](#).

Dialog Area

The area on the right side of the user interface is where all dialog boxes appear. This area can be resized by dragging the vertical splitter bar with the mouse. When a dialog box opens it replaces the current dialog box in the Dialog Area.

Desktop

The left side of the application window is the Desktop. This area can be resized by dragging the vertical splitter bar with the mouse. Online SMON windows can be resized and minimized. Minimized windows are shown at the bottom of the Desktop.


Working with SMON Tools

The following sections describe features that can help you use Online SMON tools more effectively. The topics include:

- **Configuring Display Options** - Instructions on how to configure general Online SMON options.
- **Configuring Report Options** - Instructions on how to configure display options in the Switch, Port, and Voice Port Statistics applications.
- [Using Dialog Box Options](#) - Instructions on using the dialog box options.
- [Generating Reports](#) - Instructions on how to generate reports.
- [Managing Windows](#) - Instructions on how to manage Online SMON windows.

Configuring Display Options

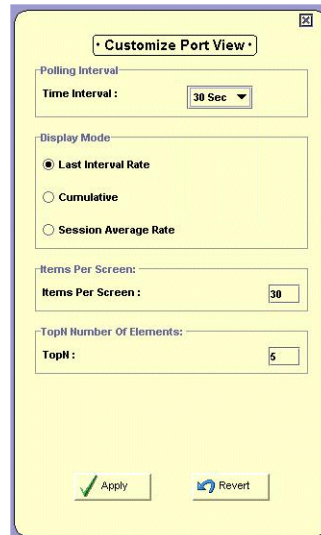
To configure display options for Enterprise Switch, Port, or Voice Port Statistics:

1. Activate the application for which you want to configure display options.
2. Click .

Or

Select **View > Customize**. The Customize View dialog box opens.

Figure 2-2. Customize View Dialog Box



The Customize View dialog box enables you to change the following options:

- **Polling Interval**
- **Display Mode**
- **Items Per Screen**
- **TopN Number of Elements**

Polling Interval

The Polling Interval option allows you to configure the way in which information is collected. If you make the polling interval smaller, you receive more accurate data at the expense of using more network resources. The objective is to use the ideal polling interval that provides accurate data using minimum network resources.

To change the polling interval, select a polling interval from the Polling Interval pull-down listbox.

The following polling intervals can be selected:

- 30 seconds
- 1 minute
- 5 minutes
- 15 minutes
- 30 minutes
- 60 minutes

* **Note:** The new polling interval will take effect when the device is next polled.

Display Mode

The Display Mode option allows you to select one of three display modes. Select a display mode using the option buttons.

The display mode options are:

- Last Interval Rate - The statistics gathered since the last poll.
- Cumulative - The accumulated statistics gathered since the start of the session.
- Session Average Rate - The average of the statistics per polling interval since the start of the session.

Items Per Screen

The Items Per Screen enables you to configure the number of switches, ports, and LAGs visible in the Enterprise Switch or Port Statistics windows. To change the number of items visible on the screen, enter a number in the Items Per Screen field.

* **Note:** The number of items per screen must be between 1 and 15.

TopN Number of Elements

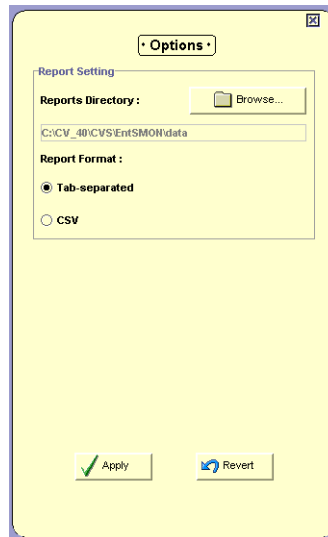
The TopN Number of Elements option enables you to configure the number of switches, ports, and LAGs visible in the Enterprise Switch or Port Statistics windows, using TopN filtering. TopN filtering enables SMON to display only the items with the heaviest traffic. The TopN filter produces a report for the 1-15 (*N*) most active items on the network.

To configure the TopN number of elements, enter the number of items to display in the Enterprise Switch or Port Statistics window in the TopN field.

Configuring Report Options

To configure report options for Enterprise Switch, Port, and Voice Port Statistics, select **File > Options**. The Options dialog box opens.

Figure 2-3. Options Dialog Box



The Options dialog box enables you to select a default directory for saving reports and configure the report format.

To select a default directory for saving reports:

1. Click **Browse**. A directory browser window opens.
2. Navigate to the directory in which you want to save reports.
3. Click **Open**. The path appears in the Reports Directory field.

To select a report format, select one of the following options:

- Tab-separated - The report is formatted as a tab-delimited file.
- CSV - The report is formatted as a comma-delimited file.

For more information on reports, refer to [“Generating Reports” on page 22](#).

Using Dialog Box Options

Information entered in a dialog box is not saved until you click the **Apply** button.

To undo all changes made to the information in the dialog box, click **Revert**. The information in the dialog box reverts to what it was when the dialog box was first opened.

If you have already sent information to the device from the dialog box and you click **Revert**, the information in the dialog box reverts to what it was when it was last applied.

* **Note:** When clicking **Revert**, the application does not poll the device for information. It is therefore possible that the dialog box may not reflect the true state of the device.

Generating Reports

You can produce two types of reports with Enterprise SMON Manager:

- **Report Now**
- **Auto Report**

Generated reports are text files that can be imported into spreadsheets such as Excel and database programs such as Access. The reports can be generated in a tab delimited format or a comma separated format. When a report is generated, it is saved to the directory specified in the Reports Directory field in the General Options dialog box.

Data in a Report Now includes only the statistics collected during the last polling interval. In an Auto Report, statistics collected at each polling interval are appended to the report.

For more information on selecting a format and a default directory for reports, refer to [“Configuring Report Options” on page 21](#).

Report Now

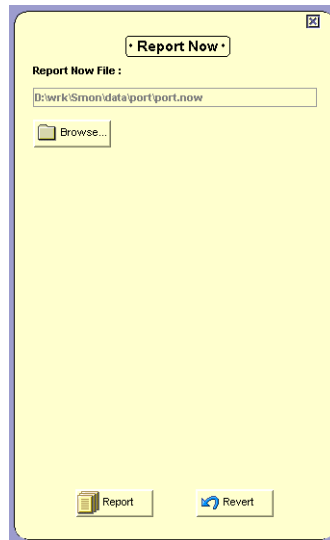
To generate a report with the statistics from the last time the device was polled:

1. Click .

Or

Select **File > Report Now**. The Report Now dialog box opens.

Figure 2-4. Report Now Dialog Box



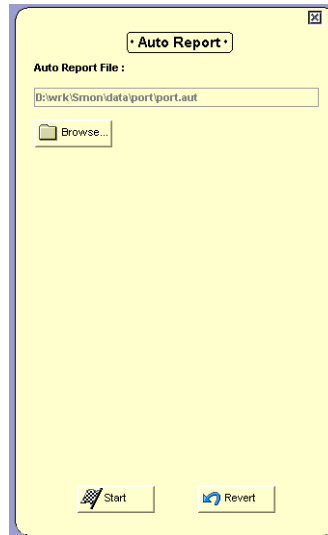
2. To change the filename and directory in which to save the report:
 - a. Click **Browse**. A file browser window opens.
 - b. Select a directory and filename for the report.
3. Click **Report**. The report is generated.

Auto Report

To start generating an automatic report:

1. Select **File > Auto Report**. The Auto Report dialog box opens.

Figure 2-5. Auto Report Dialog Box



2. To change the filename and directory in which to save the reports:
 - a. Click **Browse**. A file browser window opens.
 - b. Select a directory and filename for the report.
3. Click **Start**. The report is generated immediately. Data is added to the report after each polling interval.



Auto Reports are automatically saved to the network management station (NMS). If Auto Reports are generated on many devices for a long period of time, and none of the files are deleted, the NMS's hard disk may become full.

If this occurs, stop the applications that are generating automatic reports and delete the files that are not required.

To stop generating Auto Reports:

1. Select **File > Auto Report**. The Auto Report dialog box opens.
2. Click **Stop**.

Or

1. Close Avaya SMON Manager. Auto Reports are no longer generated.

Managing Windows

Online SMON enables you to manage open windows easily.

To cascade all open windows, select **Window > Cascade**.

To bring the next window in the list to the front, select **Window > Next**.

To bring the previous window in the list to the front, select **Window > Previous**.

To close all windows, select **Window > Close All**.

To bring a window in the list to the front, select **Window > Window Name**, where *Window Name* is the name of the window you want to view.

3 Switch Statistics

Switch Statistics allows you to see the data passing through each switch in the network. For a detailed overview of Enterprise Switch Statistics, refer to [“Enterprise Switch Statistics” on page 10](#).

Accessing Switch Statistics

To access the Switch Statistics window:

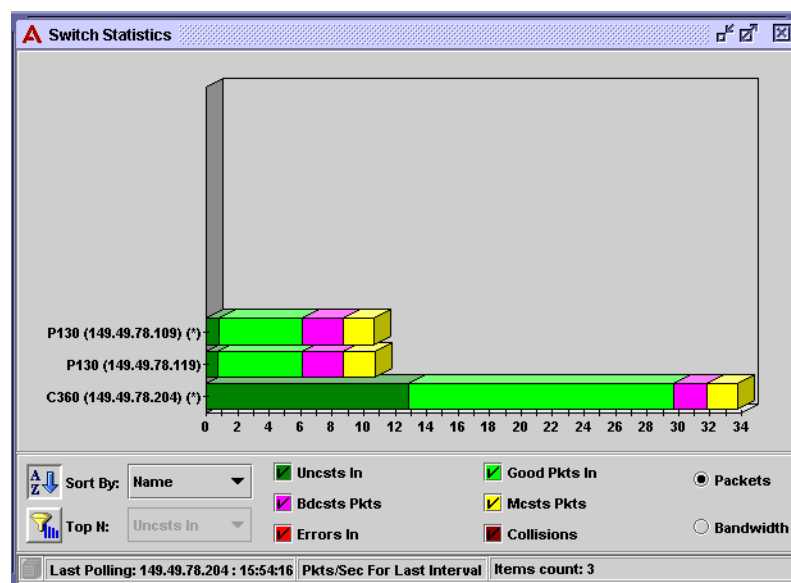
1. Click .

Or

Select **File > New > Switch Statistics**. The Switch Statistics application opens with the Switch Group Configuration dialog box open.

2. Select the switches you want SMON to poll. For instructions on selecting switches for polling, refer to [“Selecting Switches to Poll” on page 29](#). The Switch Statistics window displays the selected switches and their traffic.

Figure 3-1. Switch Statistics Window



Using Switch Statistics

The Switch Statistics window allows you to see the data passing through each switch in the network. For an explanation of the Switch Statistics window, refer to [“Understanding the Switch Statistics Window” on page 27](#).

Using Switch Statistics you can:

- Select the switches you want SMON to monitor. For information on selecting switches to monitor, refer to [“Selecting Switches to Poll” on page 29](#).
- Select the switches you want SMON to display. For information on changing display options, refer to [“Filtering the Switch Statistics Display” on page 31](#).
- Select the counters you want SMON to display. For information on selecting counters, refer to [“Switch Statistics Counters” on page 31](#).
- Sort the display. For more information on sorting the display, refer to [“Sorting the Display” on page 32](#).
- Search for specific devices. For more information, refer to [“Searching for Switches” on page 33](#).

Understanding the Switch Statistics Window

The Switch Statistics window is organized as follows:

- The X axis represents packets.
- The Y axis represents switches. Each row on the graph corresponding to a switch is labeled on the Y axis with the IP address of the switch or the user defined name for the switch.
- The following indicators can appear after the device name:
 - **[NS]** - The device is not supported by SMON.
 - **[DP]** - The device has a duplicated SMON license.
 - **[NR]** - The device is currently not responding.
 - **[NL]** - The device has no SMON license.
 - **[SG]** - The device information includes segment traffic.

- (*) - Extra information about the port is available in the port's Info Box.
- (**) - There are errors on the device. View the device's Info Box for more detailed information.
- The table below describes the items found in the Switch Statistics status bar.

Table 3-1. Switch Statistics Status Bar Items

Item	Description
Last Polling	The IP address of the last device polled and the time when the device was last polled.
Pkts/Sec For Last Interval	The average bandwidth utilization for the device over the last polling interval.
Items count	Total number of devices being polled.

Switches in the Switch Statistics window can be labeled with the switch's IP address (the default device name) or the user defined name for the switch. To toggle the display of user defined names for switches, select **View > Switch Default Naming**. The display of user defined names for switches is toggled.

For information on Switch Statistics counters, refer to [“Switch Statistics Counters” on page 31](#).


For more information about modifying the display, and the available toolbar, status bar, and mouse movement options, refer to [“Configuring Display Options” on page 19](#).

Selecting Switches to Poll

To reduce strain on the network, Avaya SMON Manager enables you to select the switches that are monitored. SMON only polls the switches you select. Select the switches you want SMON to monitor using the Switch Group Configuration dialog box.

In addition, using the Switch Group Configuration dialog box you can save groups of switches to be monitored.

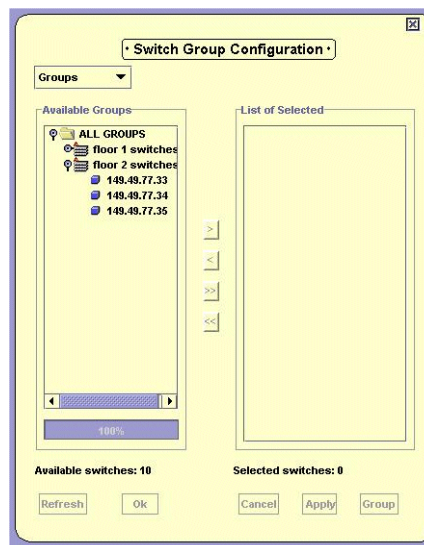
To open the Switch Group Configuration dialog box:

Click .

Or

Select **Edit > Configuration**. The Switch Group Configuration dialog box opens.

Figure 3-2. Switch Group Configuration Dialog Box



The Known Network box shows the devices in the network. You can monitor the progress of the learning process in the progress bar, located below the Known Network box.

To sort the switches displayed in the Known Network listbox, select a sorting method from the pull-down list above the Known Network listbox. Sorting methods include:

- **IP Address** - The devices are sorted by IP address.
- **Device Type** - The devices are sorted by device type.

- **Groups** - The devices are sorted by groups. Only devices in groups are listed. Moving a group to the List of Selected, selects all devices that are members of the group.

To refresh the Known Network list, click **Refresh**. The devices in the network are relearned.

* **Note:** Clicking **Refresh** also refreshes the list of device ports in the Port Group Configuration dialog box and the list of IP telephones in the Voice Port Configuration dialog box.

To add switches to the List of Selected:

Select switches from the Known Network and click >.

Or

Double-click switches in the Known Network. The selected switches appear in the List of Selected.

To select all switches, click >>. All switches are added to the List of Selected.

To remove switches from the List of Selected:

Select the switches in the List of Selected and click <.

Or

Double-click switches in the List of Selected. The selected switches are removed from the List of Selected.

To remove all items from the List of Selected, click <<. All switches are removed from the List of Selected.

To save the switches in the List of Selected as a group:

1. Click **Group**. The Save Group dialog box opens.

Figure 3-3. Save Group Dialog Box



2. Enter a name for the group.
3. Click **OK**. The switch group is created.



Filtering the Switch Statistics Display

By default, information from all switches selected in the Switch Group Configuration dialog box is displayed in the Switch Statistics window. You can limit information being displayed to specific ports using TopN filtering. This makes it easier to concentrate on specific devices in the network.

TopN filtering enables SMON to display only the items with the heaviest traffic. The TopN filter produces a report for the 1-15 (*N*) most active items on the network.

SMON selects the TopN items by a rate base which you select from the pull-down listbox in the Switch Statistics window. SMON measures the rate base for all the items to find the TopN items and then displays these items and their statistics.

For information on defining the number of items to display using TopN filtering, refer to [“TopN Number of Elements” on page 20](#).

To activate the TopN filter, click  at the bottom of the Enterprise Switch Statistics window. To deactivate the TopN filter, click  at the bottom of the Enterprise Switch Statistics window.

To select a rate base, select a TopN criteria from the TopN pull-down listbox at the bottom of the Enterprise Switch Statistics window.

Switch Statistics Counters

To select a set of statistics to display, click one of the option buttons on the lower right-hand corner of the window. The statistics sets are:

- **Packets** - Counters for selected packet types for each switch.
- **Bandwidth** - The rate at which traffic is entering and exiting each switch.

The counters relevant to the selected set of statistics appear under the graph. Check the counters you want displayed. Statistics for the checked counters are displayed as bar graphs.

The following table lists the Switch Statistics counters in the Packets statistics set.

Table 3-2. Switch Statistics Counters - Packets

Counter	Description
Uncsts In	The number of good unicast packets entering the switch.
Good Pkts In	The number of good packets entering the switch.
Bdcsts Pkts	The number of good broadcast packets entering the switch.
Mcsts Pkts	The number of good multicast packets entering the switch.
Errors In	The number of error packets filtered out by the switch.
Collisions	The number of collisions occurring on the switch.

The following table lists the Switch Statistics counter in the Bandwidth statistics set.


Table 3-3. Switch Statistics Counter - Bandwidth

Counter	Description
In BW	The rate at which traffic is entering the switch in Kbps.

Sorting the Display

You can sort the display by the device name or any of the counters available for the device.

To sort the display:


1. Click . The display is sorted by the selected criteria.
2. Select a sorting criterion from the Sort By pull-down listbox.

When sorting by Name, the bars appear in ascending order from bottom to top. When sorting by packets, the bars appear in descending order (most traffic at the bottom, least traffic at the top).

Searching for Switches

The Find option allows you to locate a specific switch in the Switch Statistics window.

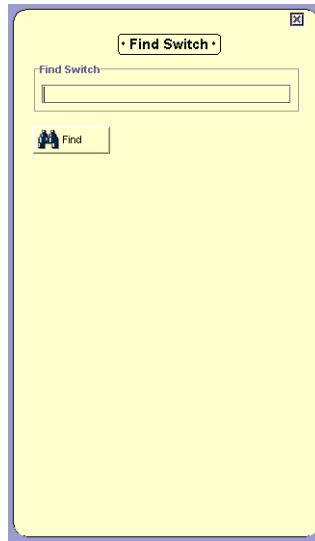
To search for a switch:

1. Click .

Or

Select **Edit > Find**. The Find Switch dialog box opens.

Figure 3-4. Find Switch Dialog Box



2. Enter the switch name or IP address in the Find Switch field.
 3. Click **Find**. The found device is highlighted for easy identification.
- * **Note:** If you enter only part of the name or IP address, SMON will find the first time the value appears.

To remove the highlight from the application window, click in the Switch Statistics window. The highlight disappears.


- * **Note:** The Find button changes to Find Next until all instances of the search information have been found.

4 Port Statistics

Port Statistics allows you to see the data passing through each port and LAG in the network. For a detailed overview of Enterprise Port Statistics, refer to [“Enterprise Port Statistics” on page 11](#).

Accessing Port Statistics

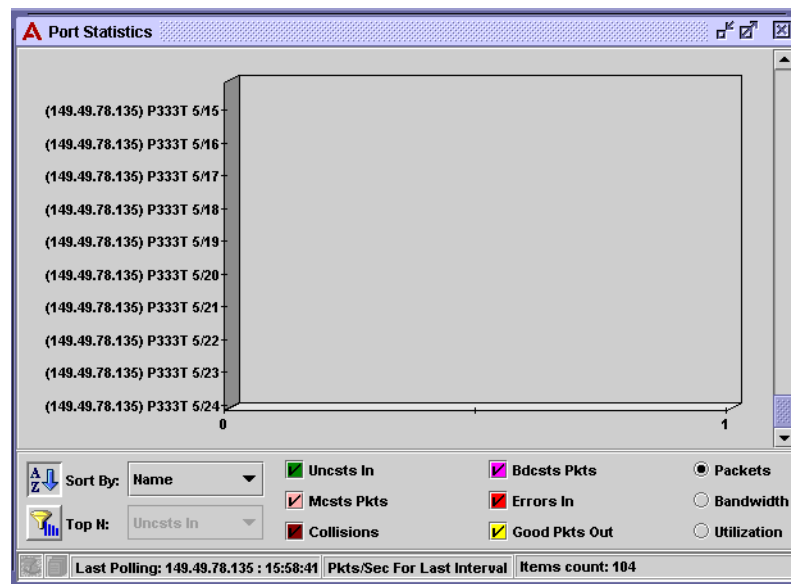
To access the Port Statistics window:

Click .

Or

Select **File > New > Port Statistics**. The Port Statistics application opens with the Port Group Configuration dialog box open.

Figure 4-1. Port Statistics Window



Using Port Statistics

The Port Statistics window allows you to see the data passing through each port in the network. For an explanation of the Port Statistics window, refer to [“Understanding the Port Statistics Window” on page 35](#).

Using Port Statistics you can:

- Select the ports and LAGs you want SMON to monitor. For information on selecting ports and LAGs to monitor, refer to [“Selecting Ports and LAGs to Poll” on page 37](#).
- Select the ports and LAGs you want SMON to display. For information on changing display options, refer to [“Filtering the Port Statistics Display” on page 39](#).
- Select the counters you want SMON to display. For information on selecting counters, refer to [“Port Statistics Counters” on page 42](#).
- Sort the display. For more information on sorting the display, refer to [“Sorting the Display” on page 43](#).
- Search for specific ports and LAGs. For more information, refer to [“Searching for Ports and LAGs” on page 44](#).

Understanding the Port Statistics Window

The Port Statistics window is organized as follows:

- The X axis represents packets or percentage of utilization.
- The Y axis represents ports and LAGs. Each row on the graph corresponding to a port or LAG is labeled on the Y axis with a port number, LAG number, or with the user defined name of a port.
- An asterisk (*****) following the name of a port or LAG indicates that extra information about the port is available in the port’s Info Box.

- The table below describes the items found in the Port Statistics status bar.

Table 4-1. Port Statistics Status Bar Items

Item	Description
Last Polling	The IP address of the last device polled and the time when the device was last polled.
Pkts/Sec For Last Interval	The average bandwidth use over the last polling interval.
Items count	Total number of ports being polled.

Ports in the Port Statistics window can be labeled with the port's IP address and port number (the default device name) or the user defined name for the port. LAGs in the Port Statistics window can be labeled with the LAG's IP address and LAG number (the default device name) or the user defined name for the LAG. To toggle the display of user defined names for ports and LAGs, select **View > Port Default Naming**. The display of user defined names for ports and LAGs is toggled.

*** Note:** For high-speed ports and LAGs with large polling intervals, bandwidth and utilization counters may be inaccurate.


For information on Port Statistic counters, refer to [“Port Statistics Counters” on page 42](#).

For more information about modifying the display, refer to [“Configuring Display Options” on page 19](#).

Selecting Ports and LAGs to Poll

To reduce strain on the network, Avaya SMON Manager enables you to select the ports and LAGs that are monitored. SMON only polls the ports and LAGs you select. Select the ports and LAGs you want SMON to monitor using the Port Group Configuration dialog box.

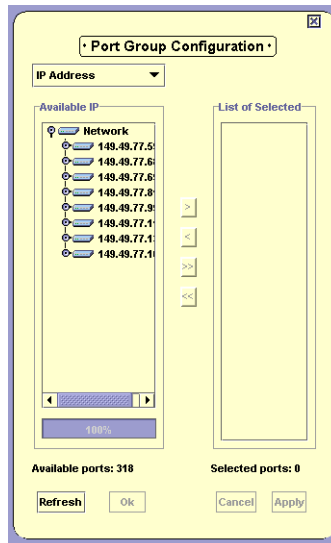
To open the Port Group Configuration dialog box:

Click .

Or

Select **Edit > Configuration**. The Port Group Configuration dialog box opens.

Figure 4-2. Port Group Configuration Dialog Box



The Known Ports box shows the device ports in the network. You can monitor the progress of the learning process in the progress bar, located below the Known Ports box.

To sort the ports displayed in the Known Ports listbox, select a sorting method from the pull-down list under the Known Ports listbox. Sorting methods include:

- **IP Address** - The ports are sorted by IP address.
- **Valuable Ports** - Only valuable ports appear in the Known Ports listbox.
- **Port Type** - The ports are sorted by port type.

- **VLAN** - The ports are sorted and represented by VLAN. When using the **VLAN** sorting method a list of VLANs appears in the Known Ports list. Moving a VLAN to the List of Selected, selects all ports that are members of the VLAN.
 - **Groups** - The ports are sorted by groups. Only ports in groups are listed. Moving a group to the List of Selected, selects all ports that are members of the group.
- * **Note:** Selecting **Network**, a device, module, port type, or VLAN, selects all ports under the selected object.

To refresh the Known Ports list, click **Refresh**.

- * **Note:** Clicking **Refresh** also refreshes the list of switches in the Switch Configuration dialog box and the list of IP telephones in the Voice Port Configuration dialog box.

To add ports and LAGs to the List of Selected:

Select ports and LAGs from the Known Ports and click >.

Or

Double-click ports and LAGs in the Known Ports. The selected ports and LAGs appear in the List of Selected.

To select all ports and LAGs, click >>. All ports and LAGs are added to the List of Selected.

To remove ports and LAGs from the List of Selected:

Select the ports and LAGs in the List of Selected and click <.

Or

Double-click ports and LAGs in the List of Selected. The selected ports and LAGs are removed from the List of Selected.

To remove all items from the List of Selected, click <<. All ports and LAGs are removed from the List of Selected.

To save the ports and LAGs in the List of Selected as a group:

1. Click **Group**. The Save Group dialog box opens.

Figure 4-3. Save Group Dialog Box



2. Enter a name for the group.
3. Click **OK**. The port group is created.

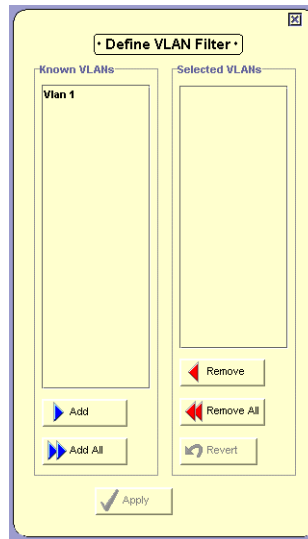
Filtering the Port Statistics Display

By default, information from all ports and LAGs selected in the Port Group Configuration dialog box is displayed in the Port Statistics window. You can limit information being displayed to specific ports and LAGs using VLAN and TopN filters. In addition, you can sort the display. For information on sorting the display, refer to [“Sorting the Display” on page 43](#).

VLAN Filtering

You can filter the ports and LAGs displayed in the Port Statistics window by VLAN. Only ports that are members of the selected VLANs are displayed in the Port Statistics window. This makes it easier to concentrate on specific VLANs in the network. To open the VLAN Filter dialog box, select **View > Define VLAN Filter**. The VLAN Filter dialog box opens.

Figure 4-4. VLAN Filter Dialog Box



To add VLANs to the Selected VLANs list:

Select VLANs from the Known VLANs list and click **Add**.

Or

Double-click VLANs in the Known VLANs list. The selected VLANs appear in the Selected VLANs list.

To select all VLANs, click **Add All**. All VLANs are added to the Selected VLANs list.

To remove VLANs from the Selected VLANs list:

Select VLANs in the Selected VLANs list and click **Remove**.

Or

Double-click VLANs in the Selected VLANs list. The selected VLANs are removed from the Selected VLANs list.

To remove all items from the Selected VLANs list, click **Remove All**. All VLANs are removed from the Selected VLANs list.

To apply the VLAN filter, click **Apply**. The Port Statistics information is filtered.



To toggle the VLAN filter, select **Actions > Activate VLAN Filter**.

TopN Filtering

TopN filtering enables SMON to display only the items with the heaviest traffic. The TopN filter produces a report for the 1-15 (*N*) most active items on the network.

SMON selects the TopN items by a rate base which you select from the pull-down listbox in the Port Statistics window. SMON measures the rate base for all the items to find the TopN items and then displays these items and their statistics.

For information on defining the number of items to display using TopN filtering, refer to [“TopN Number of Elements” on page 20](#).

To activate the TopN filter, click  at the bottom of the Enterprise Port Statistics window. To deactivate the TopN filter, click  at the bottom of the Enterprise Port Statistics window.

To select a rate base, select a TopN criteria from the TopN pull-down listbox at the bottom of the Enterprise Port Statistics window.

Port Statistics Counters

To select a set of statistics to display, click one of the option buttons on the lower right-hand corner of the window. The statistics sets are:

- **Packets** - Counters for selected packet types for each port.
- **Bandwidth** - The rate at which traffic is entering and exiting each port.
- **Utilization** - The utilized capacity of each port.

The counters relevant to the selected set of statistics appear under the graph. Check the counters you want displayed. Statistics for the checked counters are displayed as bar graphs.

The following table lists the Port Statistics counters in the Packets statistics set.

Table 4-2. Port Statistics Counters - Packets

Counter	Description
Uncsts In	The number of good unicast packets entering the switch.
Bdcsts Pkts	The number of good broadcast packets entering the switch.
Mcsts Pkts	The number of good multicast packets entering the switch.
Errors In	The number of error packets filtered out by the switch.
Collisions	The number of collisions occurring on the port or LAG.
Good Pkts Out	The number of good packets leaving the switch.

The following table lists the Port Statistics counters in the Bandwidth statistics set.

Table 4-3. Port Statistics Counters - BandWidth

Counter	Description
In BW	The rate at which traffic is entering the port or LAG in Kbps.
Out BW	The rate at which traffic is exiting the port or LAG in Kbps.

The following table lists the Port Statistics counters in the Utilization statistics set.


Table 4-4. Port Statistics Counters - Utilization

Counter	Description
Util	The average percentage of the port's capacity utilized in the last polling interval.

Sorting the Display

You can sort the display by the device name or any of the counters available for the device.

To sort the display:

1. Click . The display is sorted by the selected criteria.
2. Select a sorting criterion from the Sort By pull-down listbox.

When sorting by Name, the bars appear in ascending order from bottom to top. When sorting by packets, the bars appear in descending order (most traffic at the bottom, least traffic at the top).

Searching for Ports and LAGs

The Find option allows you to locate a specific port in the Port Statistics window.

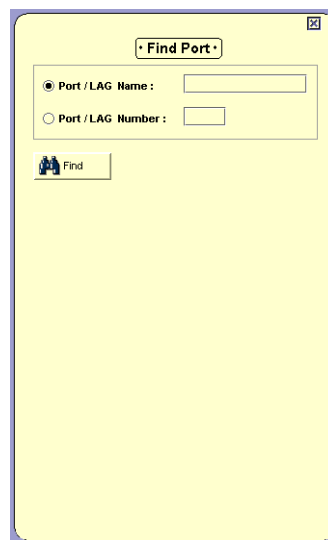
To search for a port or LAG:

1. Click .

Or

Select **Edit > Find**. The Find Port dialog box opens.

Figure 4-5. Find Port Dialog Box



2. Do one of the following:

- To search for a port or LAG by name:
 - a. Click the Port/LAG Name option button.
 - b. Enter the port name or part of the port name in the Port/LAG Name field.
 - c. Click **Find**. The found port or LAG is highlighted for easy identification.

*** Note:** If you enter only part of the name, SMON will find the first time the value appears.

- To search for a port or LAG by port number:
 - a. Click the Port/LAG Number option button.
 - b. Enter the port number in the Port/LAG Number field.
 - c. Click **Find**. The found port or LAG is highlighted for easy identification.

To remove the highlight from the application window, click in the Port Statistics window. The highlight disappears.


* **Note:** The Find button changes to Find Next until all instances of the search information have been found.

5 Voice Port Statistics

Voice Port Statistics allows you to see the data passing through each Avaya IP telephone in the network. For a detailed overview of Enterprise Voice Port Statistics, refer to [“Enterprise Voice Port Statistics” on page 11](#).

Accessing Voice Port Statistics

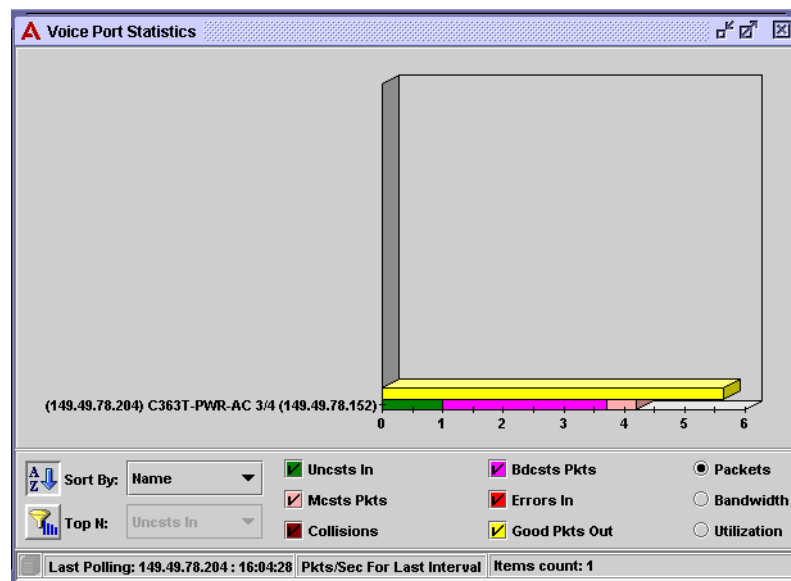
To access the Voice Port Statistics window:

Click .

Or

Select **File > New > Voice Port Statistics**. The Voice Port Statistics application opens with the Voice Port Group Configuration dialog box open.

Figure 5-1. Voice Port Statistics Window



Using Voice Port Statistics

The Voice Port Statistics window allows you to see the data passing through each Avaya IP telephone in the network. For an explanation of the Voice Port Statistics window, refer to [“Understanding the Voice Port Statistics Window” on page 47](#).

Using Voice Port Statistics you can:

- Select the IP telephones you want SMON to monitor. For information on selecting IP telephones to monitor, refer to [“Selecting IP Telephones to Poll” on page 49](#).
- Select the IP telephones you want SMON to display. For information on changing display options, refer to [“Filtering the Voice Port Statistics Display” on page 51](#).
- Select the counters you want SMON to display. For information on selecting counters, refer to [“Voice Port Statistics Counters” on page 52](#).
- Sort the display. For more information on sorting the display, refer to [“Sorting the Display” on page 53](#).
- Search for specific IP telephones. For more information, refer to [“Searching for IP Telephones” on page 54](#).

Understanding the Voice Port Statistics Window

The Voice Port Statistics window is organized as follows:

- The X axis represents packets or percentage of utilization.
- The Y axis represents IP telephones. Each row on the graph corresponding to an IP telephone is labeled on the Y axis with the IP address of the IP telephone.
- An exclamation point (!) following the name of an IP telephone indicates that it is a one-cable configuration. This means that a host is connected to the switch through the repeater mounted on the IP telephone. Traffic generated by the host is reported as part of the IP telephone’s traffic.

- The table below describes the items found in the Voice Port Statistics status bar.

Table 5-1. Voice Port Statistics Status Bar Items

Item	Description
Last Polling	The IP address of the last IP phone being polled and the time when the IP phone was last polled.
Pkts/Sec For Last Interval	Average bandwidth utilization over the last polling interval.
Items count	Total number of IP telephones being polled.


For more information on Voice Port Statistics counters, refer to [“Voice Port Statistics Counters” on page 52](#).

For more information about modifying the display, refer to [“Configuring Display Options” on page 19](#).

Selecting IP Telephones to Poll

To reduce strain on the network, Avaya SMON Manager enables you to select the IP telephones that are monitored. SMON only polls the IP telephones you select. Select the IP telephones you want SMON to monitor using the Voice Port Group Configuration dialog box.

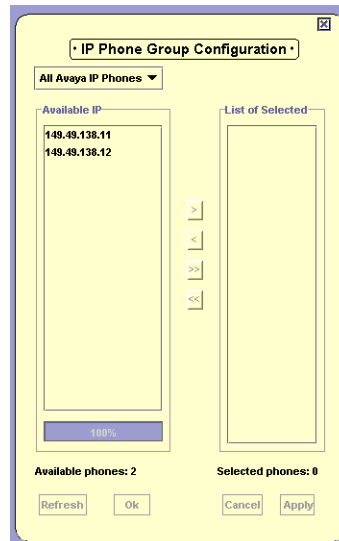
To open the Voice Port Group Configuration dialog box:

Click .

Or

Select **Actions > Configuration**. The Voice Port Group Configuration dialog box opens.

Figure 5-2. Voice Port Group Configuration Dialog Box



The Known IP Phones box shows the IP telephones in the network. You can monitor the progress of the learning process in the progress bar, located below the Known IP Phones box.

To sort the IP telephones displayed in the Known IP Phones listbox, select a sorting method from the pull-down list under the Known IP Phones listbox. Sorting methods include:

- **IP Address** - The IP telephones are sorted by IP address.
- **IP Phone Type** - The IP telephones are sorted by IP telephone type.

* **Note:** Selecting **Network** or IP telephone type, selects all IP telephones under the selected object.

To refresh the Known IP Phones list, click **Refresh**.

* **Note:** Clicking **Refresh** also refreshes the list of switches in the Switch Configuration dialog box and the list of ports in the Port Configuration dialog box.

To add IP telephones to the List of Selected:

Select IP telephones from the Known Network and click >.

Or

Double-click IP telephones in the Known Network. The selected IP telephones appear in the List of Selected.

To select all IP telephones , click >>. All IP telephones are added to the List of Selected.

* **Note:** If the application cannot determine the port to which the IP telephone is directly linked, the IP telephone cannot be moved to the List of Selected.

To remove IP telephones from the List of Selected:

Select the IP telephones in the List of Selected and click <.

Or

Double-click IP telephones in the List of Selected. The selected IP telephones are removed from the List of Selected.

To remove all IP telephones from the List of Selected, click <<. All IP telephones are removed from the List of Selected.



Filtering the Voice Port Statistics Display

By default, information from all IP telephones selected in the Voice Port Group Configuration dialog box is displayed in the Voice Port Statistics window. You can limit information being displayed to specific IP telephones using TopN filtering. This makes it easier to concentrate on specific devices in the network.

TopN filtering enables SMON to display only the items with the heaviest traffic. The TopN filter produces a report for the 1-15 (*N*) most active items on the network.

SMON selects the TopN items by a rate base which you select from the pull-down listbox in the Switch Statistics window. SMON measures the rate base for all the items to find the TopN items and then displays these items and their statistics.

For information on defining the number of items to display using TopN filtering, refer to [“TopN Number of Elements” on page 20](#).

To activate the TopN filter, click  at the bottom of the Enterprise Voice Port Statistics window. To deactivate the TopN filter, click  at the bottom of the Enterprise Voice Port Statistics window.

To select a rate base, select a TopN criteria from the TopN pull-down listbox at the bottom of the Enterprise Voice Port Statistics window.

Voice Port Statistics Counters

To select a set of statistics to display, click one of the option buttons on the lower right-hand corner of the window. The statistics sets are:

- **Packets** - Counters for selected packet types for each IP telephone.
- **Bandwidth** - The rate at which traffic is entering and exiting each IP telephone.
- **Utilization** - The utilized capacity of each IP telephone.

The counters relevant to the selected set of statistics appear under the graph. Check the counters you want displayed. Statistics for the checked counters are displayed as bar graphs.

The following table lists the Voice Port Statistics counters in the Packets statistics set.

Table 5-2. Voice Port Statistics Counters - Packets

Counter	Description
Uncsts Pkts	The number of good unicast packets entering the IP telephone.
Bdcsts Pkts	The number of good broadcast packets entering the IP telephone.
Mcsts Pkts	The number of good multicast packets entering the IP telephone.
Errors In	The number of error packets filtered out by the IP telephone.
Collisions	The number of collisions occurring on the IP telephone.
Good Pkts Out	The number of good packets leaving the IP telephone.

The following table lists the Voice Port Statistics counters in the Bandwidth statistics set.

Table 5-3. Voice Port Statistics Counters - BandWidth

Counter	Description
In BW	The rate at which traffic is entering the IP telephone in Kbps.
Out BW	The rate at which traffic is exiting the IP telephone in Kbps.

The following table lists the Voice Port Statistics counters in the Utilization statistics set.


Table 5-4. Voice Port Statistics Counters - Utilization

Counter	Description
Util	The average percentage of the IP telephone's capacity utilized during the last polling interval.

Sorting the Display

You can sort the display by the device name or any of the counters available for the IP telephone.

To sort the display:

1. Click . The display is sorted by the selected criteria.
2. Select a sorting criterion from the Sort By pull-down listbox.

When sorting by Name, the bars appear in ascending order from bottom to top. When sorting by packets, the bars appear in descending order (most traffic at the bottom, least traffic at the top).

Searching for IP Telephones

The Find option allows you to locate a specific IP telephone in the Voice Port Statistics window.

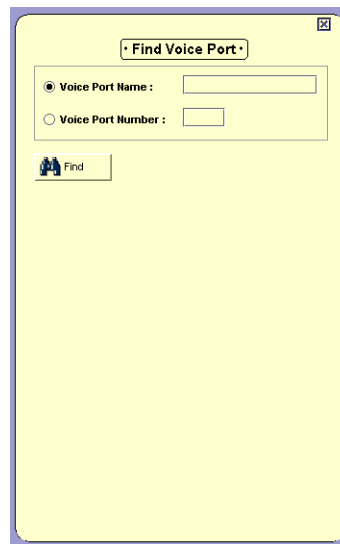
To search for a IP telephone:

1. Click .

Or

Select **Edit > Find**. The Find IP telephone dialog box opens.

Figure 5-3. Find IP Telephone Dialog Box



2. Enter the IP telephone's IP address in the IP Telephone Name field.

*** Note:** If you enter only part of the IP address, SMON will find the first time the value appears.

3. Click **Find**. The found IP telephone is highlighted for easy identification.

To remove the highlight from the application window, click in the Voice Port Statistics window. The highlight disappears.

*** Note:** The Find button changes to Find Next until all instances of the search information have been found.

6 Introduction to SMON History

This chapter provides an introduction to SMON History, and contains the following sections:

- [Accessing SMON History](#) - Instructions on accessing the SMON History window.
- [The SMON History User Interface](#) - A detailed description of the SMON History user interface.
- [Managing Windows](#) - Instructions on managing SMON History windows.
- [History Text Report](#) - Instructions on generating a text report on SMON history.

Accessing SMON History

To access SMON History, click the **History** tab in the Avaya SMON Manager window. SMON History opens.

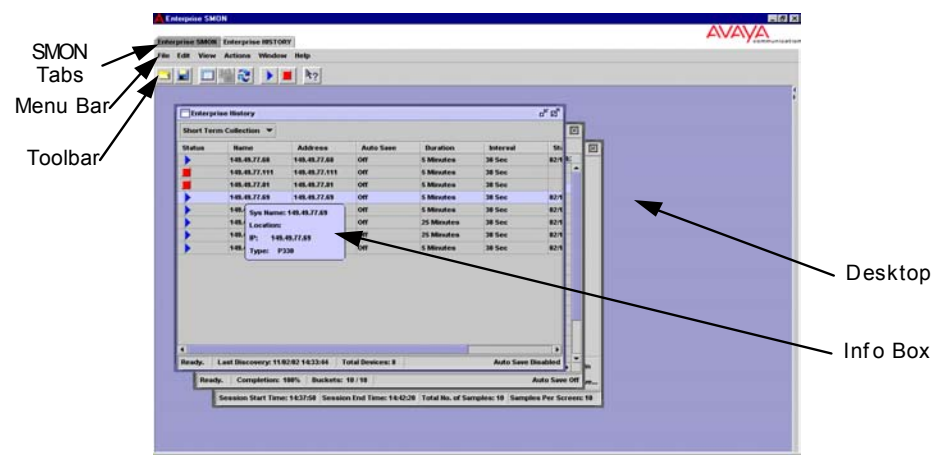
The SMON History User Interface

The user interface consists of the following elements:

- [SMON Tabs](#) - Tabs providing a method for switching between Online SMON and SMON History.
- **Menu Bar** - Menus for accessing SMON History functions. For information on the full menu structure in SMON History, refer to [“SMON History Menus” on page 77](#).
- [SMON History Toolbar](#) - Buttons providing shortcuts to important functions in SMON tools.
- [Desktop](#) - A resizable window where SMON History windows are displayed.
- [Info Box](#) - A pop-up box containing information about the item over which the cursor is placed.

The figure below shows the user interface, with its various parts labeled.

Figure 6-1. SMON History User Interface



SMON Tabs

The SMON tabs provide a method for switching between the Online SMON window and the SMON History window. To select a window to view, click the appropriate SMON tab. The relevant window appears.

SMON History Toolbar

The Toolbar provides shortcuts to the main SMON History functions and tools. The following table describes the buttons on the toolbar and lists the equivalent menu options.

Table 6-1. SMON History Toolbar Buttons









Button	Description	Menu
	Opens a saved collection.	File > Open
	Saves the SMON History table to a text file.	File > Save As
	Uploads the selected collection to the management station.	View > Switch History
	Opens a port chart window for the selected port.	View > Port Chart
	Refreshes the information in the History Table.	View > Refresh

Table 6-1. SMON History Toolbar Buttons (Continued)

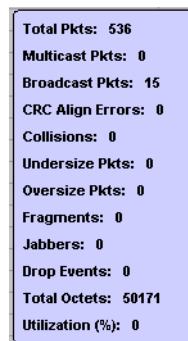
Button	Description	Menu
	Activates the selected history collection for the selected devices.	Actions > Start Collection
	Deactivates the selected history collection for the selected devices.	Actions > Stop Collection
	Opens context sensitive on-line help.	Help > Help On

Desktop

The application window is the Desktop. SMON History windows can be resized and minimized. Minimized windows are displayed at the bottom of the Desktop.

Info Box

Info boxes provide information about a device, collection, or point on a Port Chart. When the cursor is placed over a device in the History Table, a port in a History Collection, or a point in a Port Chart for about 2 seconds, an Info Box opens.

Figure 6-2. Info Box


Total Pkts:	536
Multicast Pkts:	0
Broadcast Pkts:	15
CRC Align Errors:	0
Collisions:	0
Undersize Pkts:	0
Oversize Pkts:	0
Fragments:	0
Jabbers:	0
Drop Events:	0
Total Octets:	50171
Utilization (%):	0

To close the Info Box, move the mouse.

When the cursor is placed over a device in the History Table, the Info Box provides the device's name, location, IP address, and type.

When the cursor is placed over a statistic in a History Collection, the Info Box provides all the counters on the port for the selected interval.

When the cursor is placed over a point in a Port Chart, the Info Box displays the counter, counter value, and time for the selected point.

To toggle the display of Info Boxes, select **View > Info Box**. The display of Info Boxes is toggled.

Managing Windows

When using SMON History to view collections, you may have a large number of open windows. SMON History enables you to manage open windows easily.

To cascade all open windows, select **Window > Cascade**.

To bring the next window in the list to the front, select **Window > Next**.

To bring the previous window in the list to the front, select **Window > Previous**.

To close all windows other than the Enterprise History window, select **Window > Close All**.

* **Note:** The Enterprise History window cannot be closed.

To bring a window in the list to the front, select **Window > Window Name**, where *Window Name* is the name of the window you want to view.

History Text Report

The History server saves a text report for every managed device after each Auto-Upload operation. The server creates a separate directory for each device (identified by IP address) and saves all reports generated for the device in this directory. Each day, a new subdirectory is generated in each device's directory (identified by date), and the report for that day is saved there.

The extension of the text report is **.csvhis**.

To read a text report, open any standard text editor and open the file you wish to read.

7 Using SMON History

This chapter provides information on how to use SMON History to monitor the traffic on your network, and includes the following topics:

- [Using Enterprise History](#) - An explanation of the information in the Enterprise History window and instructions on how to use Enterprise History.
- [Using Switch History](#) - An explanation of the Switch History window and instructions on how to use Switch History.
- [Using Port History](#) - An explanation of the Port History Chart and instructions on modifying the display.

For a detailed overview of SMON Enterprise History, refer to [“Enterprise History” on page 11](#).

Using Enterprise History

This section provides information about using Enterprise History, and includes the following topics:

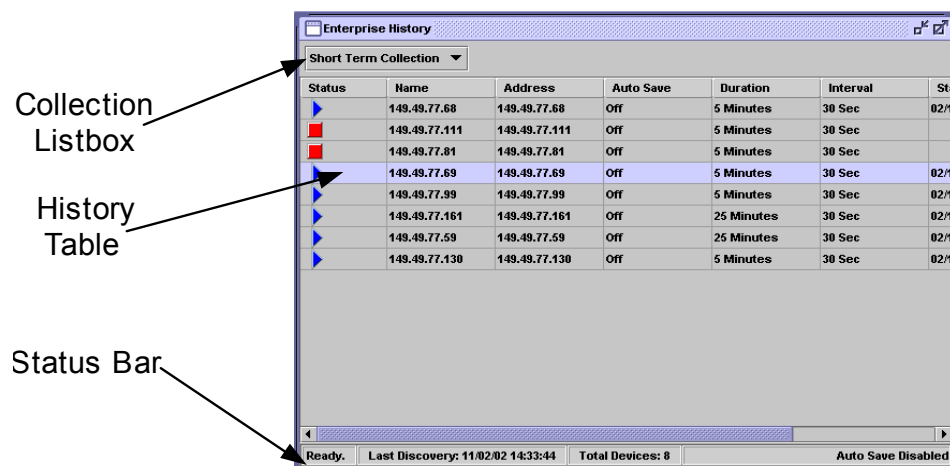
- [Understanding the Enterprise History Window](#)
- [Collection Parameters](#)
- [Activating/Deactivating History Collections](#)
- [Activating Auto Save](#)
- [Refreshing the Device List](#)
- [Saving the Enterprise History Window](#)

Understanding the Enterprise History Window

The Enterprise History window provides a list of supported devices in the network, their collection parameters, and Auto Save status.

The Enterprise History window appears when SMON History opens and cannot be closed while SMON History is running.



Figure 7-1. Enterprise History Window



The Collection Listbox enables you to select the collection type you want to see and configure in the Enterprise History window. The available collection types are Long Term and Short Term Collections.

The following table provides a list of the columns in the History Table and their descriptions.

Table 7-1. History Table Fields


Column	Description
Status	The status of the selected collection. Possible statuses are:  - The selected history collection is active.  - The selected history collection is inactive.
Name	The device name.
Address	The device's IP address.
Auto Save	Indicates if this collection participates in the Auto Save scheme (On) or not (Off). For more information, refer to "Activating Auto Save" on page 64 .
Duration	The total collection duration time.
Interval	The sampling interval for this collection, i.e., how often the device collects the History data for this Collection.
Started	The date and time when this Collection was started on the device. This field is empty if the Status is inactive.
Last Auto Save	The date and time of the last automatic save of this Collection from the device. If the save was not successful, an error indicator appears. This field is updated with every Auto Save performed on this Collection. It is applicable only if the Collection is active and Auto Save policy is active on the device. For more information, refer to "Activating Auto Save" on page 64 .

The following table provides a description of the information displayed in the Enterprise History status bar.

Table 7-2. Enterprise History Status Bar

Item	Description
Discovery Status	The discovery status of SMON History. When Enterprise History is learning the network devices, a progress bar is displayed. When SMON History finishes learning the network devices, Ready is displayed.

Table 7-2. Enterprise History Status Bar (Continued)

Item	Description
Last Discovery	The date and time of the most recent discovery.
Total Devices	The number of devices listed in the History Table.
Auto Save Status	Indicates the Auto Save Status. If Auto Save is off for all devices, the Auto Save Status is Disabled . If Auto Save is active on one or more devices, the Auto Save Status is Enabled . For more information on Auto Save, refer to “Activating Auto Save” on page 64 .
Communication Status	When SMON History is learning the network devices, the following icon is displayed: 

Collection Parameters

Each product family, such as the Avaya P130 or Avaya P882 Device, is assigned certain predefined collection parameters. The collection parameters consist of the duration of the collection, the interval at which information is collected, and the number of buckets in the collection. The following table shows the short term and long term collection parameters for different device types:

Table 7-3. Collection Parameters


Device Type	Buckets/Collection	Short Term Collection		Long Term Collection	
Parameter		Duration	Interval	Duration	Interval
P330/P130/C360/W310	10	5 min.	30 sec.	5 hrs.	30 min.
P580/P882	50	25 min.	30 sec.	25 hrs.	30 min.
M770	360	1 day	4 min.	14 days	56 min.

*** Note:** It is possible for a collection to contain more than the number of buckets listed above. This occurs when the device saves a new bucket during the upload process. The collection includes all information saved on the device at the time the upload starts and any information added during the upload.

Select a collection type using the Collection pull-down listbox at the top of the Enterprise History window. Collection parameters for the selected collection type are displayed in the History Table.

Activating/Deactivating History Collections


To activate the history collection for one or more devices:

1. Select the devices whose collections you want to activate.
 - To select all the devices in the Enterprise History Table, select **Edit > Select All**.
2. Select a collection type using the Collection listbox at the top of the Enterprise History window.
3. Click  in the SMON History toolbar.

Or

Select **Actions > Start Collection**. The selected collection is activated for the chosen devices.

To deactivate the history collection for a device or several devices:

1. Select the devices whose collections you want to deactivate.
 - To select all the devices in the Enterprise History Table, select **Edit > Select All**.
2. Select a collection type using the Collection listbox at the top of the Enterprise History window.
3. Click  in the SMON History toolbar.

Or

Select **Actions > Stop Collection**. The selected collection is deactivated for the chosen devices.

If a collection is already active, reactivating or stopping it results in the loss of data collected and stored in the device. A warning dialog box opens with the following options when an active collection is activated or stopped:

- **Yes** - Reactivate/stop the collection.
- **No** - Skip the current device and continue operation for the remainder of the selected devices.

Activating Auto Save

Enterprise History can save History Collections from devices automatically. If Auto Save is enabled for a device, when a History Collection is completed, it is saved to a file. The filename consists of the device name, collection type, date, and time separated with underscores. History Collection files have an **HIS** extension.

For example, a file named **153.34.129.64_Short_Collection_02-24-02_13-42.his** contains the Short Term Collection for the device with the IP address 153.34.129.64 that was saved at 1:42 PM on February 24, 2002.

To automatically save History Collections:

1. Select the devices whose collections you want to automatically save.
 - To select all the devices in the Enterprise History Table, select **Edit > Select All**.

2. Select **Actions > Auto Save On**. History Collections for the selected devices are saved automatically.

When Auto Save is enabled on a device, the Long Term and Short Term Collections are saved automatically.



CAUTION

Auto Save automatically creates reports and saves them to the network management station (NMS). If Auto Save is enabled on many devices for a long period of time, and none of the files are deleted, the NMS's hard disk may become full.

If this occurs, stop the applications that are generating automatic reports and delete the files that are not required.

To stop automatically saving History Collections:

1. Select the devices whose collections you do not want saved automatically.
— To select all devices in the History Table, select **Edit > Select All**.
2. Select **Actions > Auto Save Off**. History Collections for the selected devices are no longer saved automatically.

Viewing the Collection Log

The Collection Log provides information about History Collections being saved automatically. To view the Collection Log, select **View > Collection Log**. The Collection Log opens.

Figure 7-2. Collection Log

IP Address	Collectin Type	Auto Save Time	Auto Save Status
149.49.77.69	Short Term Collection	02/14/02 17:41:39	Succeeded
149.49.77.99	Short Term Collection	02/14/02 17:41:44	Succeeded
149.49.77.130	Short Term Collection	02/14/02 17:41:44	Succeeded
149.49.77.68	Short Term Collection	02/14/02 17:46:06	Succeeded
149.49.77.69	Short Term Collection	02/14/02 17:46:40	Succeeded
149.49.77.99	Short Term Collection	02/14/02 17:46:44	Succeeded
149.49.77.130	Short Term Collection	02/14/02 17:46:46	Succeeded
149.49.77.68	Short Term Collection	02/14/02 17:51:06	Succeeded
149.49.77.69	Short Term Collection	02/14/02 17:51:39	Succeeded
149.49.77.99	Short Term Collection	02/14/02 17:51:44	Succeeded

Clear Close

The Collection Log contains the following fields:

- **IP Address** - The IP address of the device for which the History Collection was saved.
- **Collection Type** - The type of History Collection saved - Long Term or Short Term.

- **Auto Save Time** - The date and time at which the History Collection was saved.
- **Auto Save Status** - The status of the Auto Save action for the History Collection. If the Auto Save was successful, the Auto Save Status is **Succeeded**. If the Auto Save was not successful, the Auto Save Status contains the reason for the failure.

You can save the Collection Log to a comma separated value (CSV) file. This file can then be imported into a spreadsheet or database program.

To save the Collection Log to a CSV file:

1. Click .

Or

Select **File > Save As**. A file browser opens.

2. Enter a name for the file in the File name field.

* **Note:** The extension for the filename is **csv**.

3. Browse to the directory in which you want to save the file.

4. Click **Save**. The file is saved.


To clear the Collection Log, click **Clear**. The Collection Log is cleared.

To close the Collection Log, click **Close**. The Collection Log closes.

Refreshing the Device List

You can refresh the list of devices in the Enterprise History window. This is useful after network devices are added to or removed from the network.

To refresh the list of devices in the Enterprise History window:

Click .

Or

Select **View > Refresh**. SMON History relearns the devices in the network and refreshes the device list in the Enterprise History window.

Saving the Enterprise History Window

You can save the information in the Enterprise History window to a comma separated value (CSV) file. This file can then be imported into a spreadsheet or database program. To save the Enterprise History window to a CSV file:

1. Click .

Or

Select **File > Save As**. A file browser opens.

2. Enter a name for the file in the File name field.

* **Note:** The extension for the filename is **csv**.

3. Browse to the directory in which you want to save the file.
4. Click **Save**. The file is saved.

Using Switch History


This section provides information about using the Switch History window, and includes the following topics:

- [Opening a Switch History Window](#)
- [Understanding the Switch History Window](#)
- [Saving a Switch History Report](#)

Opening a Switch History Window

The Switch History window provides a table with traffic statistics for all of the ports on a selected device. You can upload the Switch History data from a device or open an existing History file. In addition, you can also save the information in a Switch History window to a file.

To upload data from a device to a Switch History window:

1. Select the History Collection to upload using the Collection pull-down listbox.
2. Select the devices whose History Collections you want to upload from the History Table.
 - To select all the devices in the History Table, select **Edit > Select All**.
3. Click .

Or

Select **View > Switch History**. A Switch History window opens for each device selected.

To open a saved History file:

1. Click .

Or

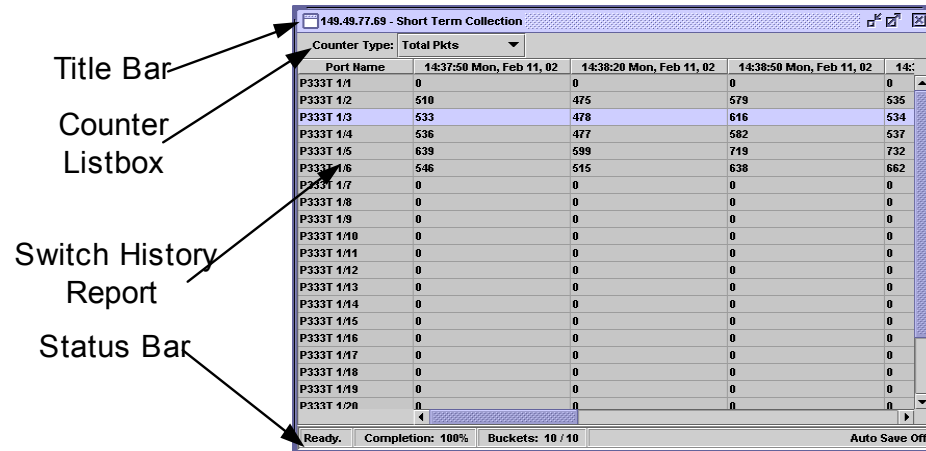
Select **File > Open**. A file browser opens.

2. Select an **his** file to open.
3. Click **Open**. The selected History file opens in a Switch History window.

Understanding the Switch History Window

The Switch History window provides a list of ports on the selected device, their collection parameters, and Auto Save status.

Figure 7-3. Switch History Window



The Title Bar of the Switch History window provides the following information:

- For uploaded data - The device name and collection type.
- For saved data - The filename of the saved collection.

The Counter Type pull-down listbox enables you to select the counter you want to see in the Switch History Report. The following table provides a list of available counters and their descriptions:

Table 7-4. Switch History Counters

Counter	Description
Total Pkts	The total number of packets entering the switch.
Multicast Pkts	The number of good multicast packets entering the switch.
Broadcast Pkts	The number of good broadcast packets entering the switch.
CRC Align Errors	The number of packets with CRC alignment errors entering the switch.


Table 7-4. Switch History Counters (Continued)

Counter	Description
Collisions	The number of collisions occurring on the switch.
Undersize Pkts	The number of undersize packets entering the switch.
Oversize Pkts	The number of oversize packets entering the switch.
Fragments	The number of packet fragments entering the switch.
Jabbers	The number of jabbers entering the switch.
Drop Events	The number of dropped events on the switch.
Total Octets	The total number of octets entering the switch.
Util (hundredth%)	The percentage of the switch's bandwidth being used.

Each row in a Switch History Report represents a port on the selected device. The first column in a Switch History Report provides port names. Subsequent columns provide the amount of the selected counter at the time and date in the column header. The number of columns in a Switch History Report is one more than the number of buckets in the collection.

The following table provides a description of the information displayed in the Switch History Status Bar.

Table 7-5. Switch History Status Bar

Item	Description
Upload Status	<p>The upload status of Switch History. When Switch History is uploading data from the device, a progress bar is displayed.</p> <p>* Note: The upload progress can be greater than 100%. This occurs when the device saves a new bucket during the upload. The uploaded data includes all information saved on the device at the time the upload starts and any information added during the upload. However, the Upload Status percentage is based on the standard number of buckets in the collection.</p> <p>When Switch History finishes uploading data, Ready is displayed.</p> <p>If the data in the Switch History Report is from a saved file, Saved Session is displayed.</p>
Completion	The percentage of the Collection that appears in the Switch History Report.
Buckets	The number of buckets in the collection.
Auto Save Status	Indicates the Auto Save Status. If Auto Save is off for the device, the Auto Save Status is Auto Save Off . If Auto Save is active on the device, the Auto Save Status is Auto Save On . For more information on Auto Save, refer to “Activating Auto Save” on page 64 .
Communication Status	<p>When Switch History is uploading data from a device, the following icon is displayed:</p> 

Saving a Switch History Report

You can save the information in a Switch History Report to a history file. This is useful if you manually uploaded a collection, and you want to save it.

To save a Switch History Report to a file:

1. Click .

Or

Select **File > Save As**. A file browser opens.

2. Enter a name for the file in the File name field.

* **Note:** The extension for the filename is **his**.

3. If you want to save the file in a different directory, browse to the directory in which you want to save the file.
4. Click **Save**. The Switch History Report is saved to the file.


Using Port History

This section provides information about using the Port History Chart, and includes the following topics:

- [Opening the Port History Chart](#)
- [Understanding the Port History Chart](#)
- [Modifying the Port History Display](#)

Opening the Port History Chart

The Port History Chart provides a chart with traffic statistics for a selected port. To open the Port History Chart for a port:

1. Select a port from a Switch History Report.
2. Click .

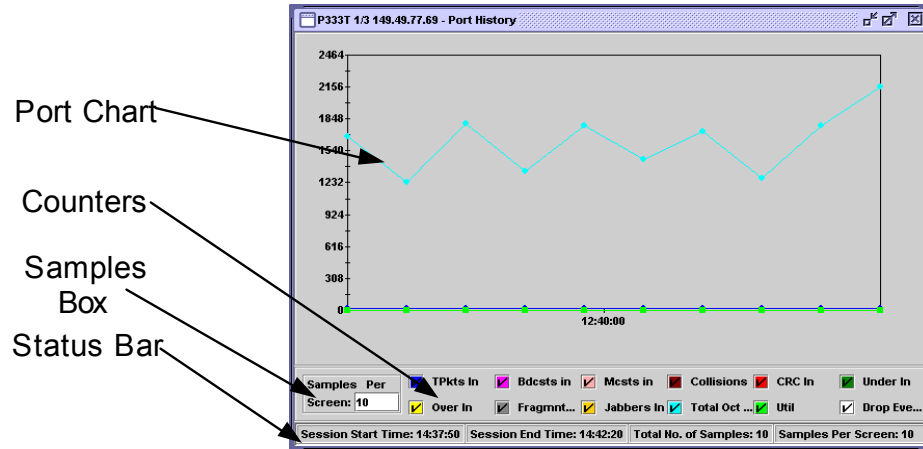
Or

Select **View > Port Chart**. The Port History Chart opens with information on the selected port.

Understanding the Port History Chart

The Port History Chart provides a graphical representation of the traffic on the selected device during the selected collection.

Figure 7-4. Port History Chart



The Port Chart shows the traffic on the port during the period of the collection. Each counter is represented by a line of a different color.

The Counters checkboxes enable you to select the counters you want displayed in the Port Chart. To view a counter in the Port Chart, check the counter's checkbox.

The Samples Box enables you to configure the number of samples visible in the Port Chart. To configure the number of samples visible in the Port Chart:

1. Enter a number in the Samples Per Screen field.
- * **Note:** The number of samples must be between 1 and the number of buckets in the collection.
2. Press **ENTER**. The display changes, showing the selected number of samples in the Port Chart.

The following table provides a description of the information displayed in the Port History Chart Status Bar.

Table 7-6. Port History Chart Status Bar

Item	Description
Session Start Time	The time at which the current Collection started.
Session End Time	The time at which the current Collection ended.
Total No. of Samples	The number of buckets in the collection.
Samples Per Screen	The number of samples visible in the Port Chart.

Modifying the Port History Display

You can modify the display of the Port History Chart.

To compress the graph to show all of the samples in the collection, double-click anywhere in the Port Chart. The Port Chart displays all of the samples in the collection.

To zoom in on the graph, press **SHIFT** and select a portion of the graph using the mouse. The graph zooms in and displays the selected portion.

To return the graph display to the configured number of samples per screen, click anywhere in the Port Chart. The display returns to the configured number of samples per screen.

A Avaya SMON Manager Menus

This appendix provides the full structure of the menus in Avaya SMON Manager.

Online SMON Menus

This section gives the full structure of the menus in the Online SMON page of Avaya SMON Manager.

File Menu

Table A-1. Enterprise SMON - File Menu

Item	Description
New > Switch Statistics	Opens or activates the Enterprise Switch Statistics window.
New > Port Statistics	Opens or activates the Enterprise Port Statistics window.
New > Voice Port Statistics	Opens or activates the Enterprise Voice Port Statistics window.
Close	Closes the active window.
Auto Report	Opens the Auto Report dialog box.
Report Now	Opens the Report Now dialog box.
Options	Opens the Options dialog box.
Exit	Closes Avaya SMON Manager.

Edit Menu

Table A-2. Enterprise SMON - Edit Menu

Item	Description
Configuration	Opens the Port or Switch Configuration dialog box.

Table A-2. Enterprise SMON - Edit Menu (Continued)

Item	Description
Find	Opens the Find dialog box.

View Menu

Table A-3. Enterprise SMON - View Menu

Item	Description
Customize	Opens the Customize Switch or Port dialog box.
Pause	Stops all polling.
Define VLAN Filter	Opens the Define VLAN Filter dialog box.
Activate VLAN Filter	Toggles the VLAN Filter.
Port Default Naming	Toggles between the display of default port names and user defined port names.
IP Telephone Default Naming	Toggles between the display of default IP telephone names and user defined IP telephone names.
Switch Default Naming	Toggles between the display of default device names and user defined device names.

Window Menu

Table A-4. Enterprise SMON - Window Menu

Item	Description
Cascade	Cascades all open windows.
Next	Brings the next open window in the list to the front.
Previous	Brings the previous open window in the list to the front.
Close All	Closes all windows.
Window Name	Brings the named window to the front.

Help Menu

Table A-5. Enterprise SMON - Help Menu

Item	Description
Contents	Opens the on-line help to the Contents page.
Help On	Activates context-sensitive on-line help.
About Avaya SMON Manager	Opens a window with Avaya SMON Manager version and copyright information.

SMON History Menus

This section gives the full structure of the menus in the SMON History page of Avaya SMON Manager.

File Menu

Table A-6. SMON History - File Menu

Item	Description
Open	Opens a saved History collection.
Save As	Saves the current History collection to a file.
Exit	Closes Avaya SMON Manager.

Edit Menu

Table A-7. SMON History - Edit Menu

Item	Description
Select All	Selects all rows in a table.

View Menu

Table A-8. SMON History - View Menu

Item	Description
Switch History	Uploads the selected collection to the management station.
Port Chart	Opens a chart showing the traffic on the port during the collection period.
Collection Log	Opens the Collection Log.
Refresh	Refreshes the information in the History Table.
Info Box	Toggles the display of info boxes.

Actions Menu

Table A-9. SMON History - Actions Menu

Item	Description
Start Collection	Activates the selected history collection for the selected devices.
Stop Collection	Deactivates the selected history collection for the selected devices.
Auto Save Off	Stops automatic history report saving.
Auto Save On	Starts automatic history report saving.

Window Menu

Table A-10. SMON History - Window Menu

Item	Description
Cascade	Cascades all open windows.
Next	Brings the next open window in the list to the front.
Previous	Brings the previous open window in the list to the front.
Close All	Closes all windows other than the Enterprise History window.
Window Name	Brings the named window to the front.

Help Menu

Table A-11. SMON History - Help Menu

Item	Description
Contents	Opens the on-line help to the Contents page.
Help On	Activates context-sensitive on-line help.
About Avaya SMON Manager	Opens a window with Avaya SMON Manager version and copyright information.

B Setting Up the SMON License

Avaya Network Management does not include a license for using SMON. Instead, a trial version of Avaya SMON Manager is included. This trial version expires 60 days after its first use.

The Avaya SMON Manager (with Avaya Network Management) package contains a license that allows you to use Avaya SMON Manager on a permanent basis. The license is supplied as a separate document in the Avaya SMON Manager (with Avaya Network Management) package.

When launching Avaya SMON Manager before entering a valid license key, a dialog box for entering the license key is displayed. If you purchased the Avaya SMON Manager (with Avaya Network Management), enter the provided license key. This allows unlimited use of Avaya SMON Manager. If you purchased the Avaya Network Management package, press **ENTER**. This allows use of Avaya SMON Manager for 60 days.

In addition, an embedded license is required for Device SMON for Avaya P130, Avaya P330, and Avaya M770 Devices. For more information, refer to the appropriate *Avaya Device SMON User Guide*.

Index

A

- Accessing
 - History 55
 - port statistics 34
 - switch statistics 26
 - voice port statistics 46
- Activating
 - history collection 63
- Adding
 - Auto Save devices 64
- Auto Save
 - adding devices 64
 - policy 12
 - removing devices 64
- Avaya SMON Manager
 - introduction 1
 - overview 4
 - tools 9
- Avaya SMON Manager Guide
 - intended readers vi
 - organization of this guide vi
 - purpose vi

C

- Changing
 - display mode 20
 - polling interval 19
- Collection
 - Log 65
 - parameters 63
- Collection, Enterprise History
 - definition 12
 - duration 13
 - long term 12
 - short term 12
- Configuring
 - Auto Save 64
 - polling interval 19
- Counters
 - port statistics 42
 - switch statistics 31
 - voice port statistics 52
- Creating
 - groups of ports and LAGs to monitor 37
 - groups of switches to monitor 29

D

- Deactivating
 - history collection 63
- Desktop 17, 57
- Device
 - rediscovery 66
- Device SMON
 - tools 2
- Dialog area 17
- Dialog box
 - find IP telephones 54
 - find ports and LAGs 44
 - find switches 33
 - IP telephone group configuration 49
 - port group configuration 37
 - switch group configuration 29
- Display mode 20

E

- Enterprise
 - monitoring 3
- Enterprise History
 - collections 12
 - how it works 12
 - overview 11
 - window 60
- Enterprise Port Statistics
 - overview 11
- Enterprise SMON History, *see* History
- Enterprise Switch Statistics
 - overview 10

F

- Filter
 - TopN 20, 31, 41, 51
 - VLAN 40
- Find IP telephone dialog box 54
- Find port dialog box 44
- Find switch dialog box 33
- Finding
 - IP telephones 54
 - ports and LAGs 44
 - switches 33
- Format report options 21

G

- General options
 - display mode 20
 - polling interval 19
- Generating
 - Enterprise reports 22
- Global network monitoring 3
- Groups
 - creating port 37
 - creating switch 29

H

- History
 - accessing 55
 - activating collections 63
 - collections 63
 - deactivating collections 63
 - managing windows 25, 58
 - toolbar 56
 - uploading data 72
 - user interface 55
- History Text Report 58
- How to
 - access port statistics 34
 - access switch statistics 26
 - access voice port statistics 46
 - activate history collection 63
 - add a device to the Auto Save report 64
 - configure the polling interval 19
 - create port groups 37
 - create switch groups 29
 - deactivate history collection 63
 - filter ports and LAGs 39
 - filter switches 31
 - filter voice ports 51
 - find ports and LAGs 44
 - find switches 33
 - find IP telephones 54
 - generate reports 22
 - manage History windows 25, 58
 - modify the Port History display 74
 - rediscover devices 66
 - remove a device from the Auto Save report 64
 - resize the desktop 17
 - resize the dialog area 17
 - select directory to save reports 21
 - select IP telephones to poll 49
 - select ports and LAGs to poll 37
 - select switches to poll 29
 - sort IP telephones 53
 - sort ports 43
 - sort switches 32

- upload data to the management station 72
- use dialog box options 21
- use display mode option 20
- use port statistics 35
- use switch statistics 27
- use the polling interval option 19
- use TopN port filtering 41
- use TopN switch filtering 20, 31
- use TopN voice port filtering 51
- use voice port statistics 47
- view the Collection Log 65
- work with the Online SMON tools 18

I

- Intended users vi
- Introduction 1
- IP telephones
 - finding 54

L

- LAGs
 - finding 44
- Log
 - Collection 65
- Long term history collection 12

M

- MAC layer top-down monitoring 6
- Management applications 3
- Managing
 - windows 25, 58
- Monitoring
 - global network 3
 - multi-tiered 6
 - switch 3
 - top-down 6

O

- Online SMON
 - toolbar 16
 - tools 10
 - user interface 15
 - working with the tools 18
- Organization of this guide vi
- Overview of Avaya SMON Manager 4

P

- Policy
 - Auto Save 12
- Polling
 - interval 19
 - selecting IP telephones 49
 - selecting ports and LAGs 37
 - selecting switches 29
 - setting interval 19

Port group configuration dialog box 37

Port History
 modifying 74
 overview 13

Port statistics
 accessing 34
 counters 42
 tool 34
 using 35
 window 35

Ports
 filtering the display 39
 finding 44
 TopN filtering 41

Purpose of this guide vi

R

Rediscovering devices 66

Removing
 Auto Save devices 64

Reports
 format options 21
 generating 22
 selecting a directory 21

Resizing
 desktop 17, 57
 dialog area 17

RMON standard 1

S

Saving reports 21

Searching
 IP telephones 54
 ports and LAGs 44
 switches 33

Selecting
 directory to save reports 21
 IP telephones to poll 49
 ports and LAGs to poll 37
 report formats 21
 switches to poll 29

SMON
 applications 3
 devices 5
 probes 5
 standard 2
 tabs 16, 56
 tools 3, 9
 top-down monitoring 6

Sorting
 IP telephones 53
 ports 43
 switches 32

Switch group configuration dialog box 29

Switch monitoring 3

Switch statistics
 accessing 26
 counters 31
 tool 26
 using 27
 window 27

Switches
 filtering the display 31
 finding 33
 TopN filtering 20, 31

T

Tool
 port statistics 34
 SMON history 59
 switch statistics 26
 voice port statistics 46

Toolbar
 history 56
 Online SMON 16

Toolbar buttons 16

Tools
 Device SMON 2
 Online SMON 10

Top-down monitoring
 MAC layer 6
 overview 6
 upper layers 7

TopN
 port filtering 41
 switch filtering 20, 31
 voice port filtering 51

U

Understanding
 the port statistics window 35
 the switch statistics window 27
 the voice port statistics window 47

Uploading data to the management station
 72

Upper layers top-down monitoring 7

User interface
 desktop 17, 57
 dialog area 17
 Online SMON 15

Using
 Auto Save 64
 dialog box options 21
 port statistics 34, 35
 switch statistics 26, 27
 voice port statistics 46, 47

V

Viewing

- the Collection Log 65

VLAN filter dialog box 40

VLAN filtering 40

Voice port

- group configuration dialog box 49

Voice port statistics

- accessing 46

- counters 52

- tool 46

- using 47

- window 47

Voice ports

- filtering the display 51

- TopN filtering 51

W

Welcome to Avaya SMON Manager vi

What is RMON? 1

What is SMON? 2

Who should use this guide vi

Window

- Enterprise History 60

Windows, managing 25, 58

Working with SMON tools 18